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*"Every possible encouragement should be extended to teachers to use the scientific method in their study of problems in education and in the application of such study to the construction of a curriculum that will square itself with the constantly changing conditions of a modern, scientific age, embracing the physical, intellectual and spiritual nature of man. In this field I see great opportunity for laymen to co-operate with our educational leaders for the improvement of the public secondary schools of the State and Nation."*

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# CLARENCE D. KINGSLEY

In an address on The High School of Tomorrow before the Department of Secondary Education of the National Education Association at its meeting in Dallas, Texas, February 28, Mr. Joy Elmer Morgan, Editor of *The Journal* of the N. E. A., paid a fitting tribute to the service of Clarence D. Kingsley, author of *Cardinal Principles,* which should be repeated.—EDITOR'S NOTE.

*THE first factor which is creating the high school of tomorrow is the effort to state educational philosophy in terms so specific and definite that it will guide teachers in the daily work of the schoolroom. A large service in this direction was rendered by the National Education Association's commission on the reorganization of secondary education. In its* CARDINAL PRINCIPLES *that commission reduced the vague statements of philosophy to concrete terms which can be applied by teachers generally. Its reports mark one of the turning points in the history of American education. No adequate account of its work has been written. The chairman of that commission, Clarence D. Kingsley, who wrote the* CARDINAL PRINCIPLES, *passed into the Great Silence in December. In a letter written since his death, his widow—herself a devoted teacher—tells of the three years of struggle during which the report was being written, of many revisions, of long and faithful effort often at great sacrifice. Mr. Kingsley gave his life to the cause of humanity no less than any soldier on the field of battle. It is gratifying that before his death he had a glimpse of the influence which his work was to have in shaping education. He lived to see the* CARDINAL PRINCIPLES *woven into the fabric of thousands of educational addresses. He lived to see them made the basis of a convention program by the National Congress of Parents and Teachers with its growing membership of more than a million fathers and mothers. He lived to see these simple principles running like golden threads through the educational literature of leading nations.*

# SOCIAL STUDIES AS THE CORE OF THE JUNIOR HIGH SCHOOL CURRICULUM*

CHARLES H. JUDD
University of Chicago

THERE is a phrase which, I venture to prophesy, will be heard in discussions of the curriculum much more frequently in the future than it has been in the past. That is the phrase "grade placement." The meaning of this phrase can easily be illustrated. We all agree that at some time in the pupil's intellectual career he should be made acquainted with the geography of North America. We are not in agreement as to the point in the elementary school at which this subject should be taught. If we put the matter in the terms suggested we have to say that the geography of North America is uncertain in its grade placement.

*Grade Placement Important.* It is of the first importance for the practical school man to know where various items of instruction belong. There is no special value in a discussion which merely urges in a vague general way that the schools teach thrift or safety, or industry, or anything else. When the schools undertake any task they must undertake it at some time and under the supervision of some one who is responsible and able to perform that task. The virtuous hopes for a new and enriched curriculum will be realized only when the enriching items secure some definite placement in the grades or in the high school.

*Natural Sequence of Topics.* There are a great many considerations which must be taken into account when one is assigning a topic to a place in the curriculum. There is no justification for an exercise in the addition of fractions until after the pupil has mastered the addition of whole numbers. The major consideration here seems to be the natural sequence of topics within the subject.

Sometimes subjects have to be postponed to one of the upper grades because there are not enough hours in the day to provide for them below. This was a governing consideration in the early days of the American school when pupils attended school so few days in the year that they were engaged in the study of the most rudimentary subjects even in the last years of their attendance.

*Maturity of Pupils.* However important sequences within subjects and limitations of early training may be, there is one consideration which is more influential than any other in determining grade placement. That is the maturity of pupils. The teacher may desire to teach pupils science, but it has proved to be impossible to realize this desire until pupils attain a

* Paper read before a joint session of the National Society for the Study of Education and the Department of Superintendence, Dallas, Texas, March 1, 1927.

sufficient degree of maturity to make instruction in science feasible. Teachers may think that pupils should be given skill in some trade, but skill has to wait for maturity.

*Bases for Content and Arrangement.* The student of educational psychology naturally tends to formulate the statements which have just been made about the relation of maturity to grade placement in some such terms as these. The curriculum is determined in its content by the world and its accumulated knowledge. The curriculum is determined in its arrangement by the psychology of the pupil.

*Importance and Influence of Psychological Traits.* Pupils in the first grade exhibit psychological traits wholly different from those of fifth-graders or those of seventh-graders. The selection of subjects to be taught will have to recognize these differences in psychological traits.

We are in a period of school history where attention to psychological traits is possible and necessary to a degree which has never before been true. Let us illustrate this by repeating the statement made a moment ago. When pupils were limited to few weeks of schooling each year the educational process was retarded. Pupils of twelve years of age and more were reading very simple material because they had not mastered the mechanics of the art of reading. They were infants in the school arts at an age when they had begun to exhibit the psychological traits of adolescence.

With the extension of school opportunities, psychological traits have come to be recognized more adequately. Today we are far more concerned with the psychological demands of each age than we ever were before.

*Justifications for the Junior High School Are Psychological.* Anyone who studies carefully the junior high school will be convinced, I believe, that it is an outgrowth of the increasing attention to psychological traits. To be sure, the administrative occasion for the rise of the junior high school in particular localities has frequently been some emergency in the building program. Sometimes the junior high school has been organized to satisfy the desire of a superintendent who did not know what this institution was or ought to be, but did want to be in style. I have these matters of building and conformity to fashion clearly in mind when I say that the true and fundamental justifications for the junior high school are psychological.

The junior high school is a device for meeting twelve-year-old pupils with a curriculum adapted to their special needs. That superintendent who attempts to organize a junior high school and leaves the curriculum unchanged from that which was characteristic of the old-fashioned seventh and eighth grade is in need of light. The heart and center of the junior high school is the curriculum organized to meet psychological traits.

*Conventional Programs Should Be Scrapped.* I am advocating as vigorously as I can that the conventional program of studies of the upper grades of the elementary school be deliberately set aside. I am advocating with equal vigor that the conventional program of the ninth grade be put on

the academic scrap heap. I have no hesitation in saying that at the present time the full psychological rearrangement of the junior high school curriculum is jeopardized more by the attitude of high schools than by any other fact. High schools are so completely committed to ancient history, algebra, and freshman English that they will recognize nothing else as appropriate for fifteen-year-old pupils. High schools will have to be waked up to a realization that the curriculums of the modern school must fit the psychological traits of pupils.

*What Are the Psychological Traits of the Junior High School Pupil?* In view of the conclusions which our argument has established, it is evident that a clear definition of the psychological traits of the pupil between the ages of twelve and fifteen will determine the selection of material for the junior high school curriculum. These traits are readily discoverable. The pupil has been trained in language and reading; he has some familiarity with numbers; he has acquired some information about the world and its people through geography and the stories of history. He knows a little about nature and he has gained fair control over his physical organism. He is on the threshold of the world which opens before him those opportunities which are to engage his attention and absorb his energy when he takes his place as a member of productive society. He sees at first very vaguely but with increasing clearness as the years pass that he is one of the world's workers. He looks forward to adult life with a kind of ambition that was impossible to the primary child. He does not understand the intricacies of industry and commerce but he has a curiosity about society and the social order which is born of a desire to share in the world's success.

*What should the school select from the store of the world's knowledge to make up the curriculum for this period?* Should it be grammar and review of addition, subtraction, multiplication and division? Should the reading lessons be trivial stories and emasculated extracts from our national literature? Should drawing deal with rigid geometrical patterns? Should the spelling of long words and the repetition of the names of the products of the countries of the world be a part of the program?

It hardly seems believable in this age when we have learned to give heed to the psychological traits of pupils that anyone could have been satisfied with the curriculum which used to be administered in the junior high school period. It seems equally unbelievable that there can long continue the half-hearted reform which characterizes many schools of our own day.

*Social Training the Chief Function of the Junior High School.* There is one and only one legitimate type of curriculum for the junior high school. It is that type of curriculum which subordinates every other consideration to the social training of pupils. Whatever the content of the courses, their purpose and their interpretations should satisfy the eager interest which pupils of the junior high school age exhibit in the social order.

*A New Kind of History Needed.* The meaning of these statements can be made more vivid by selecting a few examples. Let us consider the

oldest and best established of the social studies, namely, history. This ought not to be a series of dates and a chronicle of wars. This should open up for the pupils the story of human progress through the ages. It should tell how language has been evolved, how industry has grown and been diversified. In short, it should be a history of civilization.

*Opportunity for General Language.* A second illustration can be drawn from a field not ordinarily classified as a social science. At a number of centers a course is being developed in the junior high school known as general language. There is no more romantic story in the world than the story of the migration of words. Words change their form because men slur over the sounds which compose them and they change their meaning because the progress of nations calls for the expression of broader meanings and more precise meanings. The story of words will give children a new understanding of the nature of social co-operation.

*Mathematics Can Be Made Into a Social Science.* The Egyptians and Greeks were driven by the growing congestion of their communities to define with increasing precision the parcels of land which constituted their most substantial property. As a result they began to measure and triangulate. They learned how to deal with precision with irregular plots. They learned how to start from an established point and determine boundaries which were far away. They became so absorbed in defining and measuring space that they developed one of the most elaborate sciences known to man. In our blindness we have overlooked the romantic period of geometry and have put into our schools nothing but the unsocial logic of later demonstrative geometry. The junior high school can rescue mathematics, if it will see the social value of this science, from the formalism into which it has fallen.

*Social Aspects of the Natural Sciences.* Natural science can be introduced as an achievement of men working together for a conquest of the world. The science of invention and the science of industry are fields which children take up with the greatest avidity. It is literally astonishing to see how dull the schools have been in not selecting the social aspects of the natural sciences as the introductory chapters to the school curriculum in these subjects.

*Economics and Sociology Can Be Interpreted to Junior High School Pupils.* I have not spoken of economics and sociology because these names have a somewhat formidable sound and the subjects which go by these names are in so unorganized a state that it will be difficult to carry them down into the lower school in any form which will command the respect of their authorized representatives. There can be no doubt, however, I feel sure, that selected topics from economics and sociology belong to the junior high school.

Take such a matter as the history and character of money. Pupils are interested to know about this instrument of social co-operation but the schools of the past have been peculiarly barren in their treatment of money. They have relegated it to a chapter in arithmetic made up of a table and a few exercises in calculation.

In like fashion the schools have usually dealt with taxes and insurance as cases of percentage rather than as factors in the life of society.

As for sociology, why should pupils of the early adolescent age be left in ignorance of the reasons why communities are banded together for the common good? Why should pupils of this age be ignorant of the various types of stratifications of society, which characterize the different nations!

*Difficulties in Way of Reform Program.* The examples which I have presented are all intended to show in a concrete way what are the possible types of material now at hand ready to satisfy the social interests of junior high school pupils. I am fully aware of the difficulty of putting all this material in form for classroom use. I am quite aware that human nature in the teaching profession as well as elsewhere shrinks from the effort which is required to put through a reform program. This is the reason why so many junior high schools have been new organizations in name only. I realize as fully as anyone can the fact that teachers are so absorbed in routine that they find it difficult to take new material and put it in form for school use. This difficulty has certainly been one of the important reasons why the curriculum of the junior high school has been so slow in maturing.

*Reconstruction of Junior High School Curriculum Calls for Organized Co-operation.* It will require organized co-operation within the teaching profession to bring about in the fullest possible measure the reconstruction of the junior high school curriculum. This is not the place to discuss in detail the machinery which must be set up in order to collect and edit the material needed. Our present purpose is merely to discribe the curriculum in its character and content in order to arrive at the principles of curriculum construction which will have to be followed by anyone who deals adequately with the junior high school.

*Junior High School Pupils Demand Knowledge About the World.* For the purposes of compacting into a single phrase the thesis of this paper, resort has been had in its title to a term borrowed from the Herbartians. The Herbartians assembled the teaching material of any given grade around one central subject which they called the core of the curriculum. From the examples which have been discussed in this paper it will be seen that the idea expressed by the word core only approximates the idea here advocated. The thesis of this paper is that in the junior high school period there is a demand on the part of pupils for knowledge about the world into which they are to enter when they grow up. Every subject which they study should be organized to satisfy this interest and the selection of subjects should be made with a view to bringing into the junior high school the best possible materials for illustrating and instilling the idea of social co-operation.

The junior high school becomes under this formula a highly significant unit in the school system—a unit distinctly different from the elementary school. It is the gateway to a broad general education to be fully provided in the institutions above; for those who can not go on into the higher institutions it supplies a glimpse into the civilization of which the pupil is soon to become an active part.

# THE OBJECTIVES OF JUNIOR HIGH SCHOOL EDUCATION AND THEIR RELATION TO COURSE OBJECTIVES*

FRANK C. TOUTON
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Director of Curriculum, Pasadena, California

UNDER the general direction of your chairman, Superintendent West of Pasadena, California, it is the privilege of the speaker to collaborate this year with the Pasadena Junior High School teachers in the formulation of course of study outlines for each semester of work taught in the Pasadena Junior High Schools. In making our program we decided that our first duty was that of considering the major purposes of junior high school education and of leading the teachers in the formulation of clearly defined purposes for each semester or unit of work in the junior high school program of studies. With such purposes worked out and before them, the committees as organized are selecting and arranging the content and activity items which they plan to use in an attempt to attain the general purposes of junior high school education. Procedures to be utilized are then determined, after experimental studies as reported in current educational literature are investigated; possible correlation between subjects is pointed out; standards to be attained are set up; means of measuring pupil progress are examined and suggestive new type tests made; and an annotated bibliography is given. In all it is planned that, for each semester's work of each junior high school subject, there shall be made by these teacher-committees a 25 or 30 page typewritten unit.

The nature of these course of study outlines for the junior high school is, of course, determined by the accepted objectives for the junior high school and for the several units of its curriculum.

*Necessary Relation Between the Objectives for the Several Divisions of the System.* In our work, we were early convinced that the objectives for the junior high school curriculum could not be stated adequately without a serious consideration of the purposes and content of the Pasadena Senior High School and Junior College curricula. In the problem of directing teachers in formulating the purposes of each of the several courses in the junior high school, senior high school, and junior college curricula, it is the privilege of your chairman and the speaker to work with the thought that by the end of this school year, it may be possible for the Pasadena Secondary School System to offer to the teachers and pupils of next year a clear statement of the purposes, or objectives for each course in the curriculum for grades 7-14 inclusive.

With the ever broadening interests of individuals and groups and with the increasing acceptance of the extension of secondary education both up-

* Paper read by F. C. Touton at the Junior High School Conference of the Department of Superintendence, Dallas, Texas, March 2, 1927.

ward and downward covering grades 7-14 inclusive, the goals of secondary education, in so far as they have been defined, have become so diverse in character that it is difficult, if not almost impossible, to set down the principles which should supply guidance to even a majority of our secondary school pupils. A general formulation of principles, if worthy, accepted, and utilized would certainly give purpose to the activities of many secondary school pupils who now lack adequate direction.

Since considerable continuity exists or should exist in human relationships and life experiences, we should not expect to find that the major purposes of education should differ essentially from one level of secondary education to another, that is, from the junior high school to the senior high school, or from the senior high school to the junior college. The goals or ends of education must of necessity be relatively fixed. Such differences as should exist, for grade level groups, are differences in degree rather than in kind of type. Changes in educational procedure should appear in rate and in type of progress rather than in direction or in purpose.

*General Objectives of Junior High School Education.* In so large an enterprise as is the instructional program of the junior high school of today, it is of utmost importance that the agencies and activities employed shall be directed toward clearly defined and worthy goals. These goals, when stated, will of necessity reveal our philosophy of secondary education and will point the way toward which the efforts of both the faculty and student body will be directed. A truly adequate list of goals for junior high school education must be based on the fundamental instincts, and must comprehend the major interests and life purposes of the early adolescent and early post-adolescent population in their teens.

Thoughtful educators are today questioning seriously the nature and the extent of the values which result from undirected and purposeless effort. It is a recognized fact that an experience with no objectives, whether it be a summer vacation trip among the natural wonders of America or among the historic settings of Europe, or a lecture course in one of the natural or social sciences, is almost certain to be of less educational value than one which has been planned under expert guidance and consciously directed to the attainment of previously agreed upon objectives. Several years ago a committee of the National Educational Association proposed the "Cardinal Principles of Secondary Education" making a report which has commanded serious and much favorable consideration. The outstanding courses of study which have been formulated for secondary schools since that time have been influenced largely by the principles laid down by that committee.

To organize pupil activities about worthy projects should challenge the thought of those of us who are privileged to direct secondary school students toward enriched experiences, higher and more noble standards of living, and vocational skills. Obviously, no course or subject should be offered in any level of the curriculum which does not make a substantial contribution to the attainment of one or more of the objectives of the truly

adequate list. Moreover, one criterion for the worth of any secondary school subject must be the evident connection between the course objectives for that offering and the general objectives for secondary school education. *In a very real sense, the course is the means used in the attainment of worthy objectives. On no other basis can a course be justified.*

It is obvious that before means can be selected which are worthy, appropriate, and useful, goals must be determined upon and stated. From an extended consideration of the interests of both adolescents and adults in American life of today, it is here proposed that the junior high school should direct the curricular and extra-curricular activities of its student body in developing *abilities* in the following ten spheres:

## Objectives for Junior High School Education*

1. *Healthful Living.* Information on healthful living, and an appreciation of the ideal of a sound mind in a sound body, with health habits of a high order gained through the conscious application of principles of hygienic living.
2. *Application of fundamental processes to simple scientific and social phenomena.* An increased command and an appreciation of the importance of the fundamental processes gained through their application in simple scientific and socially worth-while situations provided by the subject-matter and the social program of the school.
3. *Discovery of interests and aptitudes.* Information on the pursuits of mankind with a variety of experiences gained through doing the ordinary unspecialized tasks in one's daily activities and through prescribed cultural and prevocational contacts giving a basis for educational and vocational guidance.
4. *Maximum use of native capacities.* Information on, and practice in forming habits of developing to the full one's physical, mental, social, and moral resources; securing for the individual maximum development in resourceful living; and guaranteeing one's richest contribution to society.
5. *Participation in a variety of aesthetic and recreational activities.* Information on a variety of aesthetic and recreational activities, habits of participating in many of them during leisure hours and an appreciation of their values in post-school leisure time activities.
6. *Membership in the school group.* Knowledge of responsibilities implied in group membership, an appreciation of the value of high ideals in civic community life gained through habits of co-operating in worthy school enterprises and in establishing group ideals.
7. *Establishing and maintaining high standards of conduct in personal and group life.* Information on social customs, regard for high moral standards, habits of responding in socially approved ways to the stimuli which life affords, developing thereby respect for established laws, strong ethical character, reverence toward God, with practice in stimulating others to their best efforts in improving existing standards of conduct.
8. *Contributing to worthy home life.* An appreciation of worthy ideals and knowledge of worthy examples with practice in developing habits of performing many units of activity which contribute to worthy home life.
9. *Evaluating the past and determining its contribution to the present.* Information on peoples and events of the past and an appreciation of their contributions to human progress with habits of evaluating the activities of racial and national groups and events of the past in terms of the then existing standards.

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* Quoted from Touton, F. C., and Struthers, A. B., *Junior High School Procedure.*

10. *Understanding the significance of larger group relationships of the world today.* Information on the family, religious, economic, industrial, and political relationships of the peoples of the world today, learning thereby the mutual inter-dependence of individuals and groups, developing broad sympathetic understanding and tolerance for the view of others, and a recognition of the various phases of social progress.

The general objectives of junior high school education serve the teacher and pupil as a state highway map serves the auto tourist, while the specific lists of semester-course objectives will show to the teacher and pupil the several routes which must be traversed and experiences to be had in the program of reaching the goals stated as general objectives.

To the extent that the objectives of junior high school education embrace the major purposes of resourceful and worthy living, to that extent can we set up truly adequate purposes for the specific courses. The place and importance of a comprehensive list of worthy objectives of junior high school education is emphasized by the fact that such a list should and would give direction:

1. To experts and committees in curriculum and course of study construction.
2. To teachers in formulating course objectives.
3. To school building specialists in housing the school program.
4. To teachers acting as curriculum directors.
5. To teachers in directing pupil activity in the subject matter and social programs.
6. To pupils in their efforts to get maximum benefits from the junior high school experience.

*Semester-Course Objectives.* Though thoughtful teachers agree that each course included in the public school curriculum should contribute to the attainment of certain clearly defined and worthy purposes, few indeed have been the attempts to set forth the contributions of these courses to the attainment of the accepted goals of secondary education. Again, educational literature gives scant guidance to those teachers and pupils who desire to exhaust the possibilities of each semester's work in each subject in an effort to realize in a higher degree the major purposes of secondary education.

*Semester course objectives should be so specific as to state the type of content to be used, the degree of mastery desired, and the major objectives of junior high school education to which each of the several lesson units makes a significant and worthy contribution.*

*Guiding Principles in the Formulation of Course Objectives.* Many and varied are the attempted solutions of the problem of formulating, for each course offered in the secondary school curriculum, a clearly defined set of subject-matter objectives. In the process of formulating these course objectives, it seems reasonable to assume and it is here suggested that the following principles should be observed:

1. The subject-matter objectives as finally agreed upon by instructors or departments for each course should obviously contribute to the attain-

ment of several "objectives of junior high school education," as given in a list similar to the formulation presented above.

2. The specific contributions of a course to each of the objectives to which a real contribution is made should, so far as possible, be mutally exclusive.
3. The words "information on, knowledge of, appreciation of, practice in, skill in, ability in, etc.," should be freely used in introducing the statements of the several subject contributions to the attainment of the objectives of junior high school education.
4. Each of the several captions used as a terse statement of a major subject matter objective should be such a modification of the statement of general objectives as will refer to the particular subject content through which a contribution is to be made.
5. The values of a subject should be evident to a student who reads the list of objectives formulated for the subject.
6. It should be possible to make out a positive case for each subject which holds a rightful place in the secondary school curriculum.

It should be observed also that no course should be expected to make equally important contributions to all ten major "objectives of junior high school education"; rather it is to be expected that the major contributions of a course will be made to the attainment of a certain few objectives. In such cases, after serious consideration has been given in an effort to point out the contributions of the course to each of the ten major objectives, only the real contributions of the course will be listed, and in case it is decided that no significant contribution is, or should be, made to the attainment of a given major objective, that fact will be stated along with the mention of the objective.

Of necessity in the present state of our secondary school curriculum many of the course contributions will be of the *information* and *appreciation* types; yet through each course it is possible to develop certain *habits* and *skills* which are of considerable importance in the personal, social, industrial, and economic equipments of the individual students.

In order that a certain amount of uniformity may be had in the program of formulating and listing the objectives of the courses, several suggested formulations, one for eighth grade civics, one for general science, one for first year Spanish, one for American history, one for bookkeeping, and one for chemistry have been worked out and are published[1] in the January, 1927, number of the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION. These may be thought of as suggestive of the desired form and extent of treatment of a helpful and useful list and typical of the many units of the junior high school curriculum.

*Objective Lists Needed.* In order that junior high school instruction may be purposefully and economically administered in terms of both pupil time and public money expended, it is essential that formulations of our aims be both general and specific. Such formulations should be so expressed as to be within the comprehension of normal pupils enrolled in

[1] Frank C. Touton, *The Role of Objectives in Secondary Education.*

the course of activity. In type these formulations should be as follows:

1. General objectives of junior high school education.
2. Objectives for the entire course on experience of which a given semester of work is an integral part.
3. Objectives for each semester's work or activity in each course or department.
4. Specific objectives for each lesson or activity unit with a suggestion as to the major objective or objectives to which a real and worthy contribution is made.

It is believed that guide lines expressed in terms of general and semester objectives will clarify to the junior high school pupil the meaning of his studies, avoid needless duplication of effort, and lead both pupil and teacher into richer and broader curriculum experiences.

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# THE ATTAINMENT OF THE JUNIOR HIGH SCHOOL OBJECTIVES THROUGH THE HOME MAKING CURRICULUM FOR GIRLS

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NO LONGER does the home making in the junior high school consist of the traditional cooking and sewing classes. The scope is much broader. It relates to all that pertains to home life, to worthy home membership. Just as the courses in general science, general mathematics, and in social studies give broad foundations, appreciative bases that unify the underlying principles in related fields, so the term "home making" implies a diversified series of units centering around the home. In a review of between fifty and sixty junior high school home economics courses throughout the country, there are found in addition to the usual foods and clothing units such units of instruction as the following: personal hygiene, marketing and shopping, budgeting, houseplanning, home decoration and furnishings, child care, home nursing, elementary textiles, care, repair and renovating of clothing, ethics of shopping, costume design, millinery, art needle work, crafts, hospitality, wise use of leisure. These units are from one to six weeks in length. Such a course develops not only skills, but right attitudes, habits and appreciations. It educates the girls through various experiences and explorations to discover their aptitudes and stimulates them to further study. The young adolescent girl with her instability, her desire to attract and to please, her love of the beautiful, her craving for activity, her altruism, her fastidiousness, and the many other characteristics of her age finds expression in some or all of these fields.

*Artistic and Ethical Principles Considered.* Stress is laid on suiting the clothes to the individual so that color is harmonious and the lines in accord with the figure. Opportunity is given along lines of art metal,

leather work, lamp shade making, and in crafts in order to stimulate the desire to make homes beautiful and artistic. The courtesy in the home, co-operation with other members of the family, consideration of parents and the kindly attitude towards the younger children are all a part of the home making training. Special effort is made to instil the characteristics of charm and grace so that the art may not be lost in these days of greater freedom of women.

*Practical Problems Illustrated Before Groups.* Not long ago it was my pleasure to see a group of home economics girls going from room to room during the home room period with a small table and a table cloth. They carried dishes, knives, forks, spoons and napkins to explain to the home room groups the proper setting of the table and the correct usage of the napkins and different utensils. Attention is also given to the types of luncheons that the children eat in the cafeteria, even to the extent of watching the trays to determine what children are eating, with a view to guidance along this line.

*The Use of Projects.* Wise teachers provide interesting ways of presenting these units. Many use projects such as fashion shows, making of costumes for plays involving the underlying principles of the clothing work, decorating their own rooms at home, furnishing rest rooms at school, giving luncheons and dinners to parents and to teachers, decorating place cards and arranging flowers for special occasions, making dresses for the younger children of the family, planning Christmas work where new clothes are made and old clothes renovated and mended for families less fortunate than their own. This gives expression to the altruism that can so well be encouraged and guided during this period of enthusiasm and spontaneity. Encouragement is given girls to read wholesome books of home life, such as *Little Women.* This may help erase some of the ill effects that come from the modern problem stories and pictures.

In places where many over-age girls, some of foreign parentage, are found, more time and guidance is given to the home making phase of the curriculum because of the pre-vocational application and because many of these girls marry young and find immediate use for this type of work. In one of the schools in the Mexican district lately the class in the foods department had typical breakfasts, luncheons, and dinners served on special tables. When the foreign mothers visited this display, they took notes so that they might work out in their own homes the things learned by the girls in the school.

*Trend of Home Making Courses.* Various studies have been, and are being made throughout the country that are influencing the content of the home making course. The following examples illustrate the trend of these investigations:

> What are the interests of adolescent girls along home making lines
>
> What do they do at home that should not be repeated at school? Should girls be excused from parts of the school work if they have home duties similar in nature?

How much time should be devoted to the making of clothes and hats, in view of the fact that so much ready made clothing and so many custom made hats are bought? Should stress be laid on the education of our girls as consumers? This involves the question of the cost of ready-made clothes. The average family can not afford to buy all its clothes ready-made. What type and how much should be made at home because of economic necessity? The fact that so many girls and women are employed may place the emphasis on remodeling, mending, and renovating clothes. What are families going to do in the future in regard to canned goods, and what should be given to educate people along this line so that health will not suffer?

Home making work then in the junior high school tends to meet the immediate needs of the girls of early adolescent age and looks forward to what the future holds as far as it is possible to determine, both along the line of their own interests as home makers and possible wage earners, and along the line of the ways in which big business indicates trends of departure from present standards. In the work taught, it stresses the science of the subject, the truths to be learned; it emphasizes the art or the aesthetic values so necessary in the commercial atmosphere of the day; and it recognizes the basic training necessary for the future mothers. It contributes generously to the big cardinal principles of education—health, wise use of leisure, pre-vocational training, worthy home membership, and character building. In the words of Mrs. Susan M. Dorsey, superintendent of the Los Angeles City schools, who was chairman of the committee that prepared the home economics report for the present year-book, it tends "to glorify the home."

# MAKING A JUNIOR HIGH SCHOOL PROGRAM

NELLIE NEEDHAM
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THE making of a program begins long before pencil is put to paper for the actual plotting of the schedule of classes and the programming of pupils. As soon as classes were at their regular work in September, 1926, the first semester of this new junior high school, Principal Leonard O. Bigham and his assistant principal began visiting classes and getting acquainted with teachers and pupils so as to determine the specific qualifications of the several teachers and the needs of the 860 pupils. In this manner the tentative assignments for the second semester of the 40 teachers then employed were decided upon, subject to readjustment as the exigencies of conditions should demand.

The placement of teachers having been tentatively determined upon, the next problem was to ascertain what particular subjects and how many classes in each would be required. The course of study at present prescribes for each pupil in a junior high school in Pasadena, six hours of recitation per day, including one hour of physical education. Each seventh grade pupil must take, in addition, English, arithmetic, social science, clothing or manual arts, and one elective—spelling and penmanship, art, music, or orchestra. Each eighth grade pupil must take physical education, English, social science, and general science, and is allowed two electives, and the ninth grade pupils have three electives.

*Number and Placement of Classes.* Assuming there will be no more than the ordinary number of failures, the number of classes in any one of the required subjects could be estimated from the enrollment of classes in the next lower grade the preceding semester. For example, there had been five 9-L English classes crowded beyond the maximum seating

| Room | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Rm. I | | | | | | | | |
| II | 8L | 8L | | 8L | 8L | 8L | 8L | |
| III | | | | | | | | |
| IV | | | | | | | | |
| H.R. | | | | | | | | |
| V | | | | | | | | |
| VI | | | | | | | | |

DIAGRAM I. SHOWING FIRST STEP IN PLOTTING CLASSES

English

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| I | 8L | 9H | | 9H | 9H | 8L | 8L | |
| II | 8H | 8H | 8H | 9L | 9L | 9L | | |
| III | 7H | 7H | 7H | 7L | 7L | 7L | | |
| IV | 8L | 9H | | 9H | 9H | 8L | 8L | |
| H.R. | | | | | | | | |
| V | 8H | 8H | 8H | 9L | 9L | 9L | | |
| VI | 7H | 7H | 7H | | | | | |

DIAGRAM III. SHOWING POSSIBLE ARRANGEMENT OF ENGLISH SECTIONS

capacity of the rooms. This surplus considered in connection with the probable failures and with new pupils entering from contributory schools having eight grades warranted the scheduling of six 9-H English classes. Thus, there was found a need for six 8-L, six 7-H, seven 8-H, and five 9-L classes. The classes for any one of these groups, as the 8-L, were blocked as shown in Diagram I.

In similar manner, the other English classes, the mathematics and social science classes were blocked in. General science, which is required of all eighth grade pupils is divided not into 8-L and 8-H, but into general science I and II, so that the total enrollment in the eighth grade determined the necessary number of classes. The number of classes required in the 7-L divisions was ascertained by the counsellor, who with the assistance of the various principals and teachers, had given the Terman tests to the 6-A classes in the contributing schools. Grouping here was based on I. Q. only.

So far as the size of the departments permit, required subjects are blocked in horizontally. This method of scheduling classes has been tried and found successful in so many schools that it needs no justification. However, lest it prove unfamiliar to some readers, the following advantages may be briefly mentioned: (1) Easy adjustment of the child. A pupil may have been classed with a group of pupils whose work is beyond his capabilities. With no change of program, but with a mere transferring of the pupil from, say, Room 2 to Room 5, he can be placed with a group where the type of work is not beyond his comprehension. Or, he may be moved from a slow group to one that has an enriched curriculum. (2) Classes may be kept more nearly of uniform size. (3) Too small classes may be assimilated readily, releasing teachers for use where there is need for more classes than planned. (This plan of grouping prevented the necessity for at least one full time teacher during our first semester, and this second semester has enabled us to handle an increased enrollment of over 100 with only two additional teachers.)

But some may object—"A teacher has too many preparations to make." This is unavoidable until the size of the school enables the scheduling of two periods per day of the various subjects. For example, the plan first suggested for this present semester was as shown in Diagram III, p. 200.

---

| Room | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 15 | 23 | 24 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Per. I | 9H | 9H | ? SPAN | 9H | 9H | 7L | 9H | 9H | French ? | Latin ? | Spanish | 7L | 9L | 9L | | 7L | 7L | 8L | 8L | 8L | 8L | | | II | II | II |
| II | 8L | 8L | | 8L | 8L | 8L | 8L | 7L | | 7L | | | | | | 7L | 9L | 8H | 8H | 9L | Anc. Hist | 9L | 8H | II | 8L | 8L |
| III | | | | | | | | | | | | 9H | 9H | 9H | 9H | 7L | 8H | 8H | 8H | 8H | | 7L | Math | 8L | 8L | 8L |
| IV | Lit. | Lit. | | Lit. | Lit. | 7L | Lit. | Lit. | | | | 8H | 8H | 8H | 8H | | 7H | 7H | 7H | 7H | 7H | 7H | Math | 8H | 8H | 8H |
| Lunch Home | Room | | | | | | | | | | | | | | | | | | | | | | | | | |
| V | 8H | | 8H | 8H | 8H | 8H | 8H | 8H | | | | 7H | 7H | 7H | 7H | 7H | 9L | 8L | Math 7H | 9L | 8L | 9L | Math | | | |
| VI | 9L | 7H | 7H | 9L | 9L | 9L | 9L | 7H | 7H | 7H | | Eng 7H | 8L | 8L | Geog 8 | | | | | | | | 7L | Geog 7L | II | II |

DIAGRAM II SHOWING PRELIMINARY BLOCKING OF REQUIRED SUBJECTS

However, the English teachers, on whom the burden falls heaviest, unanimously voiced a preference for the plan as adopted.

Scheduling classes horizontally is handicapped somewhat by certain of the subjects which have a small enrollment. For instance, clothing is required of all 7-L girls and manual arts of all 7-L boys. This semester, one teacher could care for all the girls, and another for all the boys. Moreover, as the equipment is so expensive, not many rooms can be set aside for this work and they must be used practically all the time. Hence, horizontal programming for 7-L is not feasible, and the scheduling of these classes must be dependent upon the aptitude of the pupils, the teachers and rooms available at any one period.

The next problem was to block in the electives so as to occasion as few conflicts as possible. A tentative list of selected electives was obtained from the pupils in their home rooms. This was used as a basis for scheduling classes in music, art, advanced clothing, foreign language, etc. As the seventh grade pupils have but one elective, these classes, so far as teachers and available rooms would permit, were scheduled for the same period. The chance of conflicts began in the eighth grade, where the combinations of electives could not be determined easily. (8-H mathematics and elementary mechanics, scheduled for the fourth period conflicted for fifteen out of the twenty-five boys electing the shop course. This difficulty was easily removed by forming a new class. The maximum enrollment for manual arts courses is twenty. It might be interesting to note that at present both classes in elementary mechanics have reached maximum enrollment!)

The schedule of classes thus tentatively arranged was ready to be submitted to the pupils, thus:

8-H

English, Period V
Social Science, Period II and III
General Science, Period I, II, III, IV, VI
Mathematics, Period IV
Sewing, Period VI, Room 209
French, Spanish, I
Etc.

At home room period on Friday, January 21, lasting from 12:25 to 1:05, each pupil with the advice of his home room teacher, made out his program. Reports of conflicts were sent to the office so that the possibilities of adjustment might be considered and plans made for the pupils making a second choice when conflicts could not be avoided. The schedule thus adjusted was as follows: See Diagram IV, p. 203. The program cards were then taken home for approval and signature of parents.

*Separation Into Ability Groups.* On the following Monday, the cards were collected and sent to the office by the home room teachers. Thus, all cards could be assorted immediately according to grade of pupil. With the assistance of the English teachers, practically all of whom have their

# DIAGRAM IV. SCHEDULE OF CLASSES.

| | ENGLISH | | | | | | | | | FOREIGN LANGUAGE | | | | MATHEMATICS | | | | | GEN. SCIENCE. | | | MUSIC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Room | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 9 | 10 | 11 | | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| Period I. | 9H E | 9 | 9 | | 7L E | 9H M2 | 9H A3 | Spanish | | Latin 8H, 9H | 8H | Spanish 8H | | 7L A2 | 9L E | 9L A1 | 7L A1 | A L M | S | S | F | Vocal 7th | Orch. |
| II. | 8L A2 | 8L M2 | 8L M3 | Speech II | 8L E | 8L E | 7L A4 | | | Eng. 7L A1 | | | | Eng. 8L A1 | | | Sp. Pern 7H | 7L E | | S | F | Girls' Glee | |
| III | | | | Speech I | | | | Span. 8L | | | 9L | 8L | | 7L M | 9H E | 9H A1 | 9H E | 9H A2 | F | A | S | Boys' Glee | A2 |
| IV | 9H U.E | 9H A1 | 9H E | 9H M1 | 7L M | 9H M2 | 9H A3 | Spanish 9L | | Latin 9L | 8L | 9L | | 8H A1 | 8H E | 8H A2 | | 8H M | A | F | S | | E |
| H.R | 9L Boys | Honor Society | 7L Girls | 9H Girls | 8H Boys | 8H Boys | 7L Boys | H 8 Girls | | 7H Girls | 9L Girls | 7L Boys | | 8L Girls | 8H Girls | 8L Boys | 9H Girls | 9L Boys | 7H Boys | 8L Girls | | 9H Girls | |
| V. | 8H M2 | School Paper | 8H A3 | 8H M3 | 8H A1 | 8H E | 8H E | Eng. 8H A2 | | Latin 9H | 9H | 9H | | 7H E | 7H A1 | 7H A2 | 9H Pond 7L | 7H M | 7H Math. S | | | 7L | Begin. |
| VI | 9L M1 | 7H M1 | 7H A2 | 9L E | 9L A1 | 9L A2 | 9L M2 | Eng. 7H E | | Latin 9H | 8H | 9H | | | 8L A | 8L E | Eng. 7H A1 | | | F | S | 8H&L | F+A1 |

| | SOCIAL SCIENCE | | | | | | LIBRARY CRAFT | DOMESTIC ARTS SEWING | | FOODS | MANUAL ARTS | | | | | ART | | COMMERCE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Room | 22 | 23 | 24 | 25 | 26 | 27 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| Period I. | | 8L M | 8L E | 8L E | 8L A2 | 7L M | I | 9L | 9L | 7H | Wood 9L | Sheet Metal | Print. 7H | Mech. 7H | Draw. 7H | | 7H | Typ. I | Penm. Sp. 8H |
| II. | 9L A | 8H M | 8H A | 9L E | Ame. Hist. | | I | 9H | 7L M | 7H | 7L | 9L | 9H | Elem. Mech. | 9L | 9H | 8H | II | 7H |
| III | 8H E | 8H A2 | 8H A1 | 8H M | 8H A | 7L E | I | 7L | 7L Re-Pen | 7H | 9L | 8H | 7H | 7H | Wood 7L | 9L | 7H | II | Bus. Tr. 9L |
| IV. | 7H A1 | 7H A1 | 7H A2 | 7H A2 | 7H A2 | 7H E | I | 7L A2 | 7L E | Home Making | | 8L | 7L | Elem. Mech. | Wood 7L | 7L | | I | |
| H.R. | 7L Boys | 7H Boys | 9L Boys | 9L Girls | 8H Boys | 9H Boys | | 7H Girls | 7L Girls | 8L Girls | 9H Boys | | | 7H Boys | | | | | |
| V. | 9L A | 8L E | Math. 7H E | 9L M | 8L M | 9L E | I | 9H | | | 9H | Girls | 9L | | | 7L | | II | 7L |
| VI | 7L A1 | | | | | 7L A2 | I | | Art Needle | Home Making | 9L | 9H | | 9H | Eng. 7H | 8L | | | Bus. Tr. 9H |

PHYSICAL EDUCATION TAUGHT BY FOUR TEACHERS IN FOUR CLASSES EACH.

preparation period at the same time, the cards were assorted into accomplishment groups. Thus, in the senior class there were: 9-H Fast, 9-H (2 plus), 9-H F, 9-H (2-), 9-H (3 plus), 9-H (3-), [9-H Fast, 9-H (2 plus) or E; 9-H (2), 9-H (2-), 9-H (3 plus) or A-1, A-2, A-3; 9-H (3), 9-H (3-), 9-H Slow, or M-1, M-2, M-3.] For the last group of pupils promotion was justified only by the assumption that they would get as much out of the next subject as they would out of repeating what they had just been through unsuccessfully. These groupings were not based upon the mark received, but upon the teacher's judgment of what the child was capable of doing. The judgments were the result of careful study of the child during the past semester, his daily work, test results, both subject matter and intelligence as far as the latter were available, consultation with the principal, assistant principal, and parents. The accuracy of these judgments necessarily depends upon the skill of the teacher; but then, so does largely the accomplishment of pupils grouped according to any other method. The better the teacher, the greater the success of the pupils under any method of grouping.

At conferences with the teachers, the group each was to teach was decided upon, each teacher having at least one speed group and one slow group. The nature of each group was now noted in the schedule, thus 9-H F, 9-H S, etc. It was not difficult now for the secretary to take the different piles of cards and mark on the proper room number, thus: I English, Room 2. An hour conference on two successive days sufficed to adjust the English classes.

Next, the mathematics teachers during their preparation period, without knowing how the pupils had been placed in English, assorted the cards in groups according to the pupils' ability in mathematics. As this subject is an elective beyond the seventh grade, the task of assorting was not so difficult as with the English. At one conference the cards were assorted and room marked.

Finally, the social science teachers adjusted pupils (represented by their program cards) in their classes. Thus a child who is weak in English grammar, let us say, but is strong in history, is not placed in a slow group in one department just because he is slow in another department; but each child is placed where he can work at his best, be it in a speed class in English, a slow class in mathematics, and an average class in social science. We say to a child, "We'll place you in this class. If the work is too hard for you there, we'll put you in a class where the work is not so difficult. Or, if this class is too easy, we'll place you in a class where everyone can do more work." Seldom do we find a child failing to respond to such a challenge to do his best.

*Later Adjustments.* These adjustments are by no means final. Aside from the ever-present need for adjusting the sizes of the various groups to the number of teachers available, to the maximum capacity and number of the rooms, and other requirements which the need for keeping down expenses makes imperative, there will always be adjustments to

be made. The personal equation is a large factor. A few of our pupils are assigned to certain teachers regardless of whether the group is speed, slow, or average. Teachers' judgment and even I. Q.'s have not proved infallible. The program must be so flexible that adjustments can be made whenever necessary. As a matter of fact, perfect adjustment can never be attained until each child can be treated individually and can have the teacher and the classmates exactly suited to develop to the utmost his innate abilities and potentialities.

In the departments with fewer teachers, such adjustments as described above could not be made. In general science, only three groups are possible. But, in this department, as also in manual arts, domestic arts, music, art and commerce, adjustments depend almost wholly upon rooms and teachers available, and avoidance of conflicts. Even in the grade 7-L, where the four groups, E, A-1, A-2, M, were very carefully worked out in all departments, the A-2 and A-1 were combined in one class in sewing, and some because of over crowded classes were placed with hold-overs.

When all adjustments had been made with the cards; room numbers added; and conflicts removed; the cards were returned to the home rooms, Friday, January 28th, and kept by the teachers ready for re-distribution. The following Monday, the pupils reported to their home rooms, received their cards, and by 8:20 classes were meeting on their regular schedule. All classes but the first on full time. The programs, fully signed, were collected at the end of the day by the home room teachers and turned in to the office. A daily report from the teachers as to enrollment in classes enabled the office to determine the need for new classes, and the possibility of combining classes so as to release teachers for the place of greater demand.

# THE STUDY PROBLEM OF THE JUNIOR HIGH SCHOOL STUDENT

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IN this discussion the word "study" is used in the narrow sense to signify the preparation of school work assigned by the teacher. The problem in regard to this study is: when, where, and how shall it be done? Shall this study be done after the day's work at school is over, at home under conditions more frequently unfavorable than not, and generally with little knowledge on the part of the pupil of how to perform the assigned work; or shall studying be a part of the day's school work in the class room, under the supervision and guidance of a teacher who knows how to study and can teach others how to study? We here must assume that such a teacher is in charge.

*The Home Attitude.* From the *home* we get various reactions such as: "James never brings his books home—why does he not have some home study?" "We would be glad to help the children with their home work, but they think we do not know how"; or "I think my boy's lessons should be prepared at school—I have no time to help him"; or "I need him to work when at home and there is no time to study."

*The Teacher's Attitude.* From the *teacher* we hear: "No wonder this boy fails—he never studies at home"; "How can he expect to make a passing grade when he never takes his books home?" And in looking over "unsatisfactory notices" sent to parents at intervals in each school term we find very often the cause for unsatisfactory work stated by teachers is—"Pupil does not do his home work." It might be well for all teachers to think seriously over the statement made by Foley, "No teacher should ever use as the reason for failure the fact that a pupil does not study at home."

*The Law.* The California School Law, until the organization of the junior high school, forbade the assignment of home work to pupils up to age of 14 years. This law was recently amended to permit assignment of home work to junior high school pupils. Just how the fact that the pupil was now a part of a different organization made him all at once better able to accomplish home study than he was at the same age in the grammar grade is not apparent, but it was probably thought that the junior high school would teach its pupils *how* to study, but this has not been done.

*Opinions of Educators.* Noted men in the field of education have written on the subject of home or school study, and given valuable suggestions, a few of which may be noted here. Terman, concerned about the health of the child, says: "Books should be left at school. Home study is unnecessary in grades below the high school." (He means below the

ninth grade.) He also blames home study for much of the loss of sleep of the growing child. Miller, in his book, "Directing Study," makes this statement: "Pupils in the first and second years of the junior high school should do practically all their school work within the school day. Beginning with the last year of the junior high school home study should be expected," but he also says "that even in the ninth grade the major part of real study should be done under the guidance of the teacher; and the home study should be a continuance and completion of the study commenced under this direction or guidance." This does not mean that home study should be prohibited, as any supplementary work which pupils may wish to do at home should be encouraged, but it does mean that home study in these grades should not be required.

In "Administration and Supervision of High Schools" Johnson makes the following statement: "There is a tendency in the junior high school to assign no home work but to complete each day's assignment in class. There is no doubt that under skilful instruction the class as a whole may accomplish in this manner as much work as under the home-study—class-recitation method, and perhaps more. But there are other considerations than the completion of an amount of work which has been arbitrarily alloted for a given semester or year. It is the function of the school to project itself into the life of the pupil outside the walls of the school building and to provide compelling motives for the proper use of the time not directly under school control. An important outcome of education must be the habit of using one's leisure time worthily. In schools in which specific assignments of home work are made it is important to make regulations that prevent excessive requirements on any day." Johnson's reason for home study, "linking the school and the home" seems one of the best, but its validity depends largely on the home environment.

In reference to home study for junior high school pupils, the principal of Lincoln Junior High School says: "Unless a pupil has a reasonably favorable physical and mental environment at home in which to study, very little, if any, home study should be attempted. It is necessary for ninth grade pupils to do some home work, especially in academic subjects, but little good is accomplished by assigning home work, unless it is done in a favorable home environment and according to some logical plan."

Briefly stated the conflicting views regarding home study are:

A. *In Favor of Home Study*:
   (a) Links school and outside life.*
   (b) Parents sometimes may give effective help.
   (c) Parents may become familiar with what children are doing at school.
   (d) Pupil may perfect his ability to do a problem by home practice.
   (e) Encourages a certain amount of independence in pupil.

B. *Objections to Home Study*:
   (a) Student wastes time—rarely works at high pressure. An hour of study at home counts for far less on the lessons than an hour at school.
   (b) Students who prepare work at home—waste time at school.
   (c) If assignment misunderstood—work is useless.

* See "Supervising Home Study," Foley in Educational Review, December, 1926.

(d) May borrow work from friend, or work with others—not getting the work himself.
(e) Very few know how to study sufficiently well to be able to prepare the lesson without waste of time.

*Importance of the Study Problem.* Since junior high school pupils (and I would say senior high school pupils also) do not know how to study, it becomes the duty of the school to teach them this first, last, and always, for without the ability to study "all else availeth nothing." "No teacher can escape the responsibility for fostering good study habits through clear, well-articulated lesson procedure, but in junior high school *how to learn* is as significant as *what to learn,* and the junior high school pupil should be brought through study supervision to a conscious realization of the best process for affecting mastery of content. (Psychology of Junior High School—Pechstein and McGregor.)

*The Art of Studying Must Be Acquired.* Whipple, in "How to Study Effectively," says: "most boys and girls have to acquire the art of studying as they have to acquire other habits and skills necessary to success in life." Davis says: "Few pupils know how to study effectively; teaching pupils how to study is therefore *one of the duties, if not the chief duty,* of teachers, but seldom performed. The junior high school period is the period *par excellence,* for teaching pupils how to study." The difficulty here is that teachers do not know how to teach pupils to study, because they have had no training in the most valuable subject of how to teach others to study.

The solution of the problem of *home study* or *school study* must depend upon the kind of training which can be given to the children in acquiring the art and habit of study. We find many lists of study conditions, all good, but not complete unless the pupil knows *how* to study, and has an *interest* and *purpose* in study. If these are lacking the most perfect external conditions are useless, but with interest, purpose and knowledge of *how* to study, good results may be accomplished under even unfavorable conditions.

*Teachers Trained for Supervised Study Needed.* The supervised or directed study plan has done much to help in training pupils in study habits. It could do much more if teachers knew better how to use it. If the supervised study method is successfully applied it should result in the formation by the pupil of right habits of study and a consequent increase in power to attack new problems independently. A plan described by Foley in the article previously mentioned, and which he calls the pupil-teacher-study-period would be very effective, but the teacher must know how to study and how to help pupils to study.

The problem of "home study" or "school study" will be unsolved and methods of study left to chance unless something definite is done to train teachers in this art. One of the most valuable things which could be done toward this would be to have in every teacher training college required courses in "How to Study" and "How to Teach Pupils to Study." Such courses would be much more valuable than courses in methods for teaching penmanship, history, or science.

# THE BEGINNINGS OF THE JUNIOR HIGH SCHOOL IN CALIFORNIA

*THE beginning of things is always interesting. The philosophy of the junior high school has been working in the minds of educators for nearly three hundred years—ever since provision was made for the admission of pupils at 10 and 11 years of age to enter the Boston Latin School in 1635. Evolution of ideas, like evolution everywhere, is by slow processes. It was not until 1892 that Dr. Charles W. Elliot formally announced the doctrine that the seventh and eighth grades of the public schools belong to the education of the secondary period.*

*Charles L. Biedenbach, principal of the first junior high school in Berkeley, and Bert W. Reed, one of the early junior high school principals in Los Angeles, in this number of* THE QUARTERLY *give accounts of the beginnings of the junior high school in California.*—EDITOR'S NOTE.

## ORGANIZATION OF THE JUNIOR HIGH SCHOOL IN BERKELEY

CHARLES L. BIEDENBACH
Principal, Berkeley High School

IT IS always difficult to trace the beginnings of a system of education because so many different personalities and factors enter into its organization. The first junior high school in Berkeley was opened in January 1910. It was not the creation of any one man, except in so far as its official establishment was due to Mr. Frank Bunker, who was then superintendent of schools. It has been claimed that he was forced to take this step as the easiest way out of a building situation; that the high school was overcrowded, and the people were not ready to vote money for an increased plant; that by shifting some of the younger pupils it was possible to keep the ninth grades in the grammar schools, and a new school unit was created in order to satisfy those who were not permitted to enter the high school. It is easy to see, however, that such a program would never have satisfied children, teachers, or parents, if there had not already been established in the minds of the community adequate pedagogical reasons for the creation of such a school. Mr. Bunker was an educational expert and, having assumed office in July 1908, had already had time to present to the public the more important educational theories of the day.

For some years prior to 1910 prominent school men in California had been studying problems relating to secondary education and had come to the conclusion that the secondary period really covered eight years, beginning with the seventh and ending with the fourteenth, and not only the traditional four years which were then included in the regular high school unit.

*Pioneer Work of the Committee of Nine.* With the organization of the California High School Teachers Association on January 1, 1902, an agency was provided for the official study of high school problems. The vexing problem at the time was the articulation of the high school with the

university, and committees composed of high school and university men soon succeeded in establishing satisfactory working conditions between the two institutions. Many joint meetings of the Academic Senate and the High School Teachers Association were held. At one of these on April 23, 1904, it was voted that a committee of nine be appointed to discuss questions of common interest and report when the committee felt that it had a report sufficiently worth while to warrant again calling a meeting of the two bodies. This committee was later appointed by the president of the University and the president of the California High School Teachers Association, and was composed of Professor Elmer E. Brown, Professor A. F. Lange, Professor Irving Stringham, Dr. A. W. Scott, Fred H. Clark, Herbert Lee, E. E. Kellogg, G. S. Wells and C. L. Biedenbach.

It is interesting to note two of the topics suggested for this joint committee to consider: (1) "The four years of the high school course, and the first two years of the college course: Is it practicable to rate the six year period which they cover as a unit for education purposes?", and (2) "Whether the time has not come when a more effective co-operation can be secured between the high schools and the grammar schools."

The committee held its first meeting on Saturday, December 3, 1904, at the Faculty Club in Berkeley. Professor E. E. Brown was elected chairman, and C. L. Biedenbach, secretary. The first motion made and passed was to the effect that the committee consider the seventh and eighth grades of the grammar school as in reality included in the term of secondary instruction, and subject to secondary methods. The second motion adopted was that in discussing topic (1) (as stated above) the committee should consider questions relating to the program of studies and methods of treatment in the *eight* year period beginning with the seventh grammar grade, and ending with the second year of college. Another motion carried at the same meeting was, "That it is the sense of this committee that the qualifications of the teachers in the seventh and eighth grades be substantially those required of high school teachers."

This committee of nine met monthly up to and including its final meeting on March 10, 1906. Most of the meetings were held in San Francisco at the Mechanics Library. The March meeting was adjourned to meet April 18, 1906. When that day came San Francisco was in ashes and the committee never again met officially. The members agreed that it would take the schools years to put into operation the various recommendations which had been made by the committee, and approved by the organizations which had created the committee, and that it would not be worth while for that particular committee to continue in existence.

During its life the committee considered many phases of secondary education, and conducted many important educational conferences which were participated in by prominent university and high school men. It accomplished much good in creating a better understanding between the university and the high schools.

*Early Conditions Favorable to Junior High School in Berkeley.* It is not the purpose of this paper, however, to discuss the accomplishments of

the committee. I wish merely to show that the waste of time in the seventh and eighth grades, as they then existed as part of the grammar schools, was a matter of serious consideration, and that the educational leaders of the State were thinking of those grades as a proper part of the secondary period some years before the first junior high school was actually established. What appeared at that time to be a serious dilemma in the Berkeley school department was really a fortunate opportunity for the creation of the first junior high school. The secretary of the committee of nine was principal of the McKinley grammar school and, therefore, in a position to try out many of the theories advocated by the committee. From a report made by him to a meeting of the California Teachers Association, December 27, 1905, the following extracts are quoted:

> "Above the sixth grade, through the high school and university years, there is a natural grouping of studies by two year periods. The education of the seventh and eighth years belongs to the secondary period. A re-organization of the work of these grades is therefore necessary."
>
> "The material of study and the methods of teaching in the seventh and eighth grades should be of high school character; therefore, the teachers should possess the qualifications of high school teachers."
>
> "The teaching of a foreign language in the seventh and eighth grades should be recommended as an elective."
>
> "Such language should be French or German. Where local demand exists, Latin may be introduced."
>
> "Such language shall be taken as a substitute for other work now taken and only by those electing it."
>
> "That as a substitute for much of the present seventh and eighth grade arithmetic that is unnecessary or worse, there be a course in mathematics."

In so far as it was possible under the grammar school organization, these ideas were carried out in the McKinley grammar school, which had already been conducted on the departmental plan for about ten years. Courses in Latin, French, German, and Spanish were given in the seventh and eighth grades, usually by university cadet teachers before regular school hours. Courses in manual training and home economics had been introduced. It was, therefore, an easy step when the opportunity came by the addition of the ninth grade, to immediately establish the McKinley junior high school. It was also a fortunate circumstance that the grammar school had been housed in three buildings, so that it was possible to separate the pupils. All the younger children who could not be transferred to other schools were concentrated in a small building across a main street, and became a separate elementary school. The seventh, eighth, and ninth grades were established in a building of their own, thus making it possible to create an institution with an identity and an individual atmosphere right from the start. The third building, which was on the same lot with the main building, was used for vocational courses.

When the McKinley junior high school was organized, a ninth grade was also kept in the Washington school, which became the Washington junior high school, but since all nine grades were housed in the same building, this institution did not have the same opportunity. It grew in spite of its handicap, however, and later the three upper grades were moved into a new building and became the Edison junior high school. In 1911 the

Franklin school on San Pablo Avenue, and the Whittier school on Milvia Street were also designated as junior high schools, though they had to keep all of their nine grades. In 1915, during the administration of Superintendent M. C. James, money was voted by the people of Berkeley for the erection of four junior high school buildings to contain only the seventh, eighth and ninth grades. The McKinley school became the Frances Willard, the Washington was transferred to the Edison; the Franklin became the Burbank; and the Whittier became the Garfield, which was then on Walnut and Rose streets.

Berkeley now has four splendid junior high schools of the three-year type. They are located in different parts of the city and have been developed to serve the best interests of their local communities. There has never been a question as to the value of these institutions, and it is safe to prophesy that they will continue as they are until the universities drop off their freshman and sophomore years. When that time comes our junior high schools will add the tenth year, and a new type of school will be created which will contain the eleventh, twelfth, thirteenth and fourteenth years, rounding out a college education for the great mass of our young people.

## THE JUNIOR HIGH SCHOOL IN LOS ANGELES

BERT W. REED
Principal, Hollenbeck Junior High School, Los Angeles

WHEN John H. Francis returned from Europe in 1909 he brought with him the intermediate school idea. Mr. Francis had previously outlined the plan in a letter to Superintendent E. C. Moore. Mr. Frank Bunker, then Assistant Superintendent of Schools in Los Angeles, thought so highly of the idea that when elected Superintendent of Schools at Berkeley, he established two intermediate schools in January, 1910, the first on the Pacific Coast and probably the first in the country.

In February 1911, Mr. Francis, then superintendent in Los Angeles, established the first intermediate school in that city. In September 1911 four more such schools were organized, in each case forming a group of seventh, eighth and low ninth children housed in a slightly remodeled elementary school building. Imagine, if you can, groups of former elementary and high school teachers working in a new school organization without purposeful training and with no place to obtain it except by laborious effort and experimentation in the laboratory provided. This was a slow process and would have been discouraging had it not been for the vision and enthusiasm of the man who had the idea. A ship sailing an uncharted sea, without compass, guided only by the pole-star.

*Early Curriculum Difficulties.* The curriculum consisted largely of gleanings from the traditional courses of the seventh and eighth grades and from the high school grades. While this was not ideal, it did furnish variety which of itself was extremely stimulating. Foreign languages

and commercial work were offered as low as the seventh year and so long as the methods of presentation were adapted to young children, the comprehension and progress were astounding.

Another factor entered almost unconsciously that made even a stronger appeal than was furnished by the increased variety of subjects. As students completed the work of the intermediate school and were placed in the high school it was seen that some work beyond the first year of high school had been done, so that by a little extra effort, including some vacation schooling, many students were enabled to complete the work of the high school in less than the remaining three years. This tended to stimulate undue efforts to accumulate credits toward an early graduation. It also increased the interest of the home and students but added to the criticisms and opposition of the high schools.

*New Methods and Better Teaching Demanded.* Then began a serious study of the matter of adjustment. As a means to an end, the name "Intermediate" was changed to "Junior High," and almost by universal consent these schools are now called junior high schools. The leaders in education began to outline the purposes of the junior high schools and soon discovered that curriculum practices were secondary to the care and development of early adolescent youth. Even this discovery did not obviate the necessity for new and more varied contacts. A cry was raised for textbooks adapted to the new situation. Publishing houses attempted to supply old texts with new titles. These did not meet the requirements. We must have new and better books compiled out of experiences in the new field. The junior high schools created a demand for new methods and better teaching. Expert development of the boys and girls of this age required expert methods of teaching and management. In addition to the qualifications of scholarship and experience in the old types of schools it was discovered that personality and adaptability were among the chief requirements.

*New Types of Buildings and Equipment Required.* Buildings and equipment were inadequate for the new type of school. In most instances an old elementary or high school plant was converted into a new plant by taking out one group of children and putting another in; by removing or putting in a few partitions or by adding a few pieces of equipment. In many instances, because of the deficiencies in buildings and equipment, seventh and eighth grades were placed in the high schools. While it is generally conceded that this so-called six-year high school is quite unsatisfactory, yet in 1925 there were one and one-half times as many such schools as there were junior high schools.

All these demands were indeed difficult to meet. A school organized with a curriculum selected from the ones already in use, with a faculty having only the traditional qualifications of scholarship and experience, with inadequate buildings and equipment, was at best only a departmentalized elementary school.

*Opposition Outside and Within the School Department.* The prob-

lems confronting the junior high school movement were not always within the organization. Through ignorance and misunderstanding, and sometimes through selfishness and malice, many were led to oppose vigorously this new type of school. The taxpayer protested the increased cost. Better teachers, more equipment, a wider range of exploration and activity naturally costs more money and as in all matters of education it is a slow process to evaluate the returns. The elementary school, its principal, teachers and patrons protested the loss of its upper grade children. They openly declared, "We shall have nothing left." They thought they were losing all the people upon whom they could rely to maintain musical and other clubs for entertainment and leadership. It was only after forced trial that they would concede that the junior high school was distinctly a forward step in behalf of the elementary school. Then, too, the senior high school deplored the loss of its freshmen, being quite sure they would not be well taught and wondering what was to become of the enrollment if deprived of such great numbers. It is not surprising, then, that in some communities charges of illegality were made before the educational authorities and in the courts, Superintendents and boards of education shook their heads in doubt and in many instances were led to permit the grouping of these children only as an expediency or an experiment in housing economy.

*A Record of Achievement.* Notwithstanding these things what is the record? In the fifteen years since the organization of the first six, the number of junior high schools in the state of California has increased to one hundred thirteen. The enrollment varies from less than fifty to more than two thousand. Scarcely a community of sufficient size to warrant it is without a junior high school. School officials generally recognize its importance. Our state conventions of superintendents and principals devote as much time to a study of its interests as is given to all other matters. Our state officials, the Superintendent of Public Instruction, the Commissioner of Secondary Education, and their assistants declare the junior high schools to be the most important unit in our system of education.

The movement is wide spread. The Fifth Yearbook of the Department of Superintendents N. E. A. for 1927 is devoted entirely to the junior high school curriculum. From data secured by the United States Bureau of Education these facts are published: The number of segregated junior high schools in 1925 was 879, of which Pennsylvania had 108, Massachusetts, 75, and California, 73. Between 1920 and 1924 junior high school enrollment increased 927 per cent.

*Many Problems Remain Unsolved.* The curriculum will continue to be a subject for study and revision. Teachers are receiving better training. More suitable equipment is being installed. And now the junior high school is looking hopefully forward to the day when colleges will admit wholly the senior high school record, thus leaving the junior high school free to give the best education possible to adolescent youth—to develop individual tendencies and to prepare for the normal activities of life.

# PROFESSIONAL FACULTY MEETINGS*

ALICE BALL STRUTHERS
Principal, Thomas Starr King Junior High School, Los Angeles

THE spirit of experiment, guidance, and social activity that characterizes the junior high school calls for opportunities for co-operative conferences where new and unsolved problems may be studied, discussed, evaluated, and plans of procedure determined. The faculty meeting should therefore be a time for educational programs and social expression. These should result in a common understanding of purposes and plans in all phases of work, make possible a wiser correlation of activity, and bring about a sincere spirit of co-operation with a delightful social atmosphere. The active preparation and participation of faculty members stimulate interest and result in professional growth which in turn is reflected in a better guidance of pupils. To establish policies that all faculty members are ready to support, to plan an organization with underlying principles that all may appreciate, and to make adjustments to fit individual needs requires democratic, earnest, sincere, co-operative, active participation of every member of the faculty.

Programs based upon the following subjects have proved interesting, stimulating, and helpful:

What Are Our Policies?
Basis for Organization.
The Health Survey of Our School.
What Home Visits Revealed to Me.
Achievement in Relation to Mental Capacity.
Does Type of Mind Affect Character of Work?
A Personality Study.
A Problem Conference.
Adjustment of Curriculum to Mental Capacity.
Directed Study Plans.
Counselor's Report on Educational Survey.
Department Reports as Basis for Pupil Guidance.
Convention Reports.
The Home Room.

The list is endless. Superintendents, supervisors, directors and other educational representatives often are able to make contributions to faculty meetings which make for unity and solidarity of purpose.

A few typical reactions of teachers to professional programs rather than ordinary routine are convincing in their import.

Results of pupil-personnel surveys made by the teachers were presented in faculty meeting. Such surveys entail a vast amount of careful, tactful effort on the part of each teacher concerned, but those who have experienced the worth, feel that the effort is not wasted. One is continually surprised at the wealth of fact concerning each child that can be used to help the individual achieve his highest possibilities. Many adjustments would remain unnoticed except for the socialized faculty conference which brings such problems to general knowledge. By interpreting the background of each individual all can work together to help him overcome his difficulties and bring him to the realization and achievement of his greatest

* This discussion is a compilation from reactions of faculty members of Thomas Starr King Junior High School.

capacities. For instance, those pupils who rate low in intelligence tests because of foreign home and vocabulary difficulties need to be called to the attention of their teachers, for such pupils need special instruction in English. They should be retested as they make progress and reassigned as soon as their difficulties are mastered.

Because of the comparative newness and hence lack of general information concerning the department for the correction of speech defects a more detailed account of this particular survey and organization procedure is here presented.

It has been the policy of the department for the correction of speech defects to establish junior high school centers, in so far as possible, in districts in which there have been elementary speech classes. The purpose in so doing has been to follow up speech cases after transfer to junior high school. It has been found in some cases of stammering, although great improvement has been shown in the lower grades, that there may be a recurrence as the pupil reaches the junior high school age. There may be two major causes contributing to this recurrence, namely the new and increased complexity of the school environment and the physiological and psychological changes of adolescence. It is with the thought of providing remedial assistance during this transition period that the speech correction class in the junior high school finds its importance and signficance.

A preliminary survey to determine the actual needs of a school for speech correction is necessary. The following findings were discovered in the school under study:

| | |
|---|---|
| Number of boys | 7 |
| Number of girls | 2 |
| | 9 |

| | |
|---|---|
| Number of cases of stammering: | |
| Boys | 6 |
| Girls | 0 |
| Number of cases of lisping and other defects: | |
| Boys | 1 |
| Girls | 2 |

Feeling that a better understanding of this special field could be gained by a more direct contact, the principal asked the supervisor of the department to meet with her teachers early in the term. At this meeting the types of defects and methods of instruction were discussed. This was followed by a short demonstration lesson. The mental and physical aspects were discussed in order to throw more definite light upon the understanding of the individual so handicapped.

As a result of the faculty meeting there was woven a closer fabric of co-operation. Many new cases were detected as is indicated in the following report on enrollment for November 24, 1926:

| | |
|---|---|
| Number of boys | 13 |
| Number of girls | 6 |
| | 19 |

| | |
|---|---|
| Number of cases of stammering: | |
| Boys | 11 |
| Girls | 0 |
| Number of cases of lisping and other defects: | |
| Boys | 2 |
| Girls | 6 |

A constructive attitude of understanding so essential to the stammerer was also established. There has been evidenced a real, live interest in this special work by the helpful attitude of the teaching body. Such an attitude will go far towards assisting in accomplishing corrections.

The mathematics department welcomed its opportunity to present to the general faculty an outline of its procedure. The preceding meeting had heard the mathematics teachers of the country criticized through the N. E. A. Year Book; had heard them labeled as unprogressive exponents of isolated, unvitalized materials. The accusation was a spur to the plans of the department, for the mathematics faculty was busy at that time with the directed study procedure in the mathematics classes of the school. The aim of this study was to present the actual practice in mathematics classes in the development of independent study habits and to suggest ways and means to other departments. The study was made according to the educational plan of pretesting (finding where the pupils stand in relation to certain abilities), guidance (directing the pupils towards the attainment of certain goals), and post-testing (checking progress made).[1]

The abilities which were considered were grouped under three main headings, The Study Tools, The Materials of Study, The Will to Study. Study Tools was subdivided into: (1) Mathematical Concepts and Processes, (2) Graphing, (3) Silent Reading, (4) English Composition, (5) Handwriting. The materials of study included (1) Textbook, (2) Supplementary Materials. The will to Study emphasized motivation and concentration.

Each topic was treated under pretesting, guidance, and goals by examples from class room experiences. The ultimate aim of the presentation was to give evidence that the mathematics work in the school accomplishes its purpose in giving pupils a knowledge of its processes which is wide in its experiences, definite in its manipulations, and meaningful in its application. Such enlightenment puts other departments in a position to know what may be expected of pupils in the application and use of mathematics in their various contacts with it as a tool subject.

The home economics department presented its work from various angles, outlining the course of study in Home Making and pointing out the social value of the work. This was a revelation to many of the faculty who had no idea of the scope of the work in Home Economics. It also clarified the problem of guidance.

This department is called upon to perform many services for the school. After the meeting there were many offers of help by members of the faculty from other departments who did not have such an opportunity to serve the school and who wished to offer themselves for work at any time when the service should fall heavy upon the Home Economics department.

This spirit of co-operation brought on by such meetings is a tie that binds all in cheerful enthusiastic service for the school. The cup of tea served in the Home Economics rooms brought all together in good fellowship.

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[1] An Annotated Bibliography on Directed Study, Department of Psychology and Educational Research, Los Angeles.

# THE ARTICULATION OF THE JUNIOR AND SENIOR HIGH SCHOOL*

JESSE H. NEWLON
Superintendent of Schools, Denver

THE articulation of the separate units of the American system of schools has long been a most vexatious problem.

One reason for the establishment of the junior high school was the faulty articulation between the old eight-grade elementary school and the four-year high school. It was believed that the break was too abrupt, and one of the greatest educational undertakings of the day was that of bridging this gap. The junior high school arose partly in response to this situation. In many ways it has bridged the gap. In other ways this new institution, free from the shackles of tradition and the leading strings of conventionality, has created or revealed more clearly other difficulties.

The junior high school has caught the imagination of the American people, and undoubtedly is firmly established in our scheme of education. It has demonstrated its worth, but it is still in the formative stage.

The senior high school too is experiencing a metamorphosis. It is changing, and the problem of articulation is that of articulating a changing institution with a changing institution. But the rate of change has been more rapid in the elementary and junior high school than in the senior high school, and this constitutes perhaps the chief difficulty. The purpose of this paper will be to seek the reason for the difference in rate of development in these two schools.

*Problems of Articulation.* Recently I asked a group of fifteen junior and senior high school principals to state briefly the problems of articulation which they had encountered. I shall not give you a detailed analysis of the replies, but shall indicate the seven leading problems as they see them.

1. Lack of understanding on the part of the senior high school teacher of the objectives of the junior high school.
2. The pupil too frequently finds a radical change in teaching methods on entering the senior high school.
3. The junior high school teachers do not understand that the senior high school is faced with the demands of college entrance requirements, and that its course of study and procedures are dictated to a large extent by these requirements.
4. The senior high school does not make adequate provision for individual differences.
5. The articulation of subjects that are continuous between the two schools. There is evidence that curriculum revision programs are reducing the irritation at this point. The chief obstacles encountered will be discussed later.
6. The senior high school does not provide adequate guidance.
7. The pupil activity program in the senior high school is less fully developed than in the junior high school, with the result that pupils feel lost in the senior high school.

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* An address in the joint program of the Society for the Scientific Study of Education and the Commission on the Curriculum, at the meeting of the Department of Superintendence, Dallas, Texas, March 1, 1927.

*Mind-Set Blocks Progress.* One thing stands out as distinctly as Pike's Peak on a clear day from reading these replies, and that is that the greatest difficulties of articulation are found in the professional attitude or mind-set of the senior high school teacher and in our old friend college entrance requirements. It is, then, these two problems that I want to discuss briefly.

*Conflict Between Reactionary and Liberal.* First, let us consider the senior high school teacher. The high school has old and powerful traditions. The service of many of the most influential teachers goes back twenty or thirty years, and antedates to a large extent the scientific movement in education. The result is the old conflict between the reactionary and the liberal, both within the senior high school and between the two schools. The prestige that the high school teacher has always enjoyed is a factor of great importance. For example, most high school teachers are reluctant to be transferred to junior high or elementary schools.

Lest I be misunderstood, let me say now that I am not talking about all teachers or about individuals. In Denver, many of the outstanding leaders, judged by any standard, are found among the senior high school teachers, and for that matter some of the most traditionally minded, all things considered, must be ranked among those of greatest worth to the system. But if we are to bring about a proper articulation of these two institutions and of other units of our American school system, we have got to recognize the facts that are at the bottom of our problems. There is evidence that the leaders in the two schools are beginning to face conditions frankly and in a manner quite refreshing.

## Senior High School Teachers Resist Change

For example, a senior high school principal, in answer to my questions, refers to "the problem of getting the senior high school teacher who is handicapped by precedent and tradition to understand and accept the junior high school idea."

Another senior high school principal refers to "the apparent inability of senior high school teachers to adapt themselves to meet new situations."

I quote more at length from a junior high school principal: "The type of instruction in junior high school is to a large extent designed to make an interest appeal to the pupil, and the matter presented is to a considerable degree for exploratory purposes. It is difficult for the senior high schools to appreciate this method which is so different from their own. They seem to feel that much of the work is either play or a frittering of time because they have not analyzed our methods and aims together. In many cases they do not hesitate to make the pupils and through them the homes aware of their attitude."

And again: "The *teachers of long service in senior high school* (italics mine) hold an attitude of distrust toward the activities and tendencies of the junior high school. They do not wish to incorporate them at all in their own work. Hence they resist or wet-blanket any effort at uniting forces or forming a continuous program."

Who will deny that these statements could be made of conditions in

almost any city? Indeed, I believe conditions in Denver are much better than the average. There is abundant evidence that the problems of articulation cannot be satisfactorily solved until there is a change of heart and outlook on the part of many senior high school teachers.

In setting up our curriculum revision program in Denver we appointed separate committees for the senior and junior high schools, in order that the junior high school teachers might present their points of view without being overawed by the greater prestige of the high school. We made no wiser decision in connection with the entire program. The junior high school committees went enthusiastically and confidently ahead with their work and their point of view freely expressed proved invaluable. This condition served as a great stimulus to some of the senior high committees. The result was in most instances cordial teamwork between committees, although in some cases the committees of the respective schools suffered much agony as they wrestled with their problems and predilections. But the outcome has been a steady increase in co-operation and good will between the two institutions.

*Struggle Between the Old and the New.* The experiences just described only illustrate one of the most difficult problems in secondary education: the struggle between those who would cling to old methods and procedures at all costs and those who believe that changing social and economic conditions, the expansion of secondary school attendance, and the results of the scientific study of education demand changes in methods sometimes drastic if the school is to meet the needs of a dynamic society. Frequently the reactionary and progressive are found in the same person, the individual who sees the need of change but clings tenaciously to the old and adapts himself to new conditions only with heroic mental anguish. "Oh, well," you say, "we find the conservative and the progressive in every institution." True. But conditions make the struggle between the old and the new crucial in secondary education today.

*Removal of Mind-Set.* How can this difficulty of mind-set be removed? To me the necessities of the situation seem quite evident and should not be blinked.

1. The younger teachers are bringing into the faculties of the high schools in many instances a thorough professional training and a different professional outlook. As more of these younger teachers accede to positions of leadership, conditions will improve. A premium should be placed on initiative and leadership, whether it is found in age or youth.

2. But we cannot wait for replacement of personnel to solve these problems, and as a matter of fact such replacement will not in itself solve them. When all of us recognize the facts in the situation, we shall have taken the greatest step forward. The result will be a more insistent demand for increased professional training for these teachers. Teachers who have been effectively exposed to the study of the science and philosophy of education cannot be slaves to mere tradition.

3. The college must take its share of the responsibility for existing conditions. Many college professors, who are interested in subject matter and not in boys and girls, strive with the best of motives to indoctrinate their students with their own narrow notions of education and teaching, and frequently the minds of these young teachers are with difficulty opened to new viewpoints.

## College Entrance Requirements Hinder Articulation of Secondary Courses

This brings us to our second point, the effect of college entrance requirements.

When an attempt is made to change content and method, let us say in Latin, the first question that is raised is that of entrance requirements. In recent years there has been a spectacular rush into the colleges, with the result that in the secondary schools large numbers are selecting courses solely with this goal in view. This causes a crowding in college preparatory subjects, notwithstanding many boys and girls would like to take courses in art, home economics, and other subjects that count only in a limited way towards college entrance. The situation is illustrated by a university with what are today liberal entrance requirements which prescribes eleven units in the subjects of English, foreign language, mathematics, laboratory science, and history. Eleven units leave five that may be distributed, as far as college entrance requirements are concerned, among all of the other subjects contained in the varied offerings of a modern cosmopolitan high school. It must be noted, also, that these requirements reach into the junior high school; that pupils must begin to plan definitely for college entrance in the selection of courses in the ninth year. This means that the curriculum problem of the entire secondary school system is affected.

Present tendencies are revealed in part by a recent investigation which shows a falling off in the country in the enrollment in home economics in the senior high schools. It is significant that the falling off in such subjects as art, home economics, and music comes with the increase in the number preparing for college. The pupil who is preparing for college has his curriculum largely made for him, and to date it is made without reference to his educational needs but only on the mere opinion of college teachers and executives as to what these requirements should be—opinion backed up by no stronger argument than that of a hallowed tradition. Tradition may exert a good or a baleful influence. The mere fact that a practice is traditional is certainly not in itself sufficient warrant for its continuance.

Of even more serious import, in my opinion, is the effect that these requirements have on the selection and organization of subject matter. While the college tends less and less to prescribe content in such detail as formerly, yet the regulations are such and the hold of tradition is such as to stereotype rather effectively instruction in the older subjects. For example, most colleges prescribe for entrance one or two units of a laboratory science, and they expect that approximately one-half of the time will be devoted to laboratory work. Such prescription, plus the hold that tradition and the opinion of college teachers have on the imaginations

of high school teachers, renders next to impossible any thorough reconstruction of content and methods in science. Similar conditions obtain more or less in other subjects. You may think that I am getting off my subject, but this situation is the crux of the whole problem of articulation and of curriculum making for the senior high school. These requirements color the thinking of teachers and complicate the problem of making a continuous program of secondary education designed solely in the interest of the individuals and society. Nor does the presence of large numbers of pupils not destined for college mean that the school can freely plan courses for them. The college entrance problem complicates the entire situation. The senior high school teacher then should not be too severely blamed for his peculiar mind-set.

The proper articulation of the various units of our school system may call for a further reorganization and regrouping of grades. For example, a 6-4-4 system may replace the present 6-3-3 system. The development of junior colleges may presage such a change with the addition of two more years to the common schools. If teachers and executives should look with favor on such a development, what difficulties would they first encounter? They would doubtless run straight into the college entrance requirement problem and the prejudices of teachers under the influence of the college tradition who cling to the old ways of doing things.

### College Entrance Requirements Need Scientific Examination

There are two points that I want to make about college entrance requirements. The first is to emphasize their effect on the attitude of the teacher, and the second is to state with all the vehemence of which I am capable that the time has come to subject these requirements to scientific examination. As yet little has been done to determine experimentally what should be the policy as to admission to college. The prescription of English, history, mathematics, science, and a foreign language is made on three assumptions: first, that these subjects afford a general discipline of the intellectual faculties that is necessary to equip the pupil to do college work; second, that their present content is necessary to give the pupil the tools with which to do college work; and, third, that the present college curriculum and methods are in every way satisfactory.

As to the first assumption, it is necessary only to state that the old doctrine of formal discipline has long since been exploded.

As to the second, the answer is that if a pupil expects to take up the study of Latin in the college he should probably study Latin in the secondary school, but if he does not expect to study Latin or mathematics in the college or university, why should he be required to take these subjects in the senior high school merely for college entrance?

It has never been determined what facts need to be mastered in high school to enable the pupil to take up the study of specific subjects in college. For example, it would probably be difficult to make a case for spending one or more years learning the facts needed to begin the study of a science in college courses. The speaker believes in requiring the study

of science in the high school, but on other grounds than those of college entrance. Under present conditions, a fundamental reorganization of the secondary school curriculum, such as is being attempted in some colleges through the introduction of orientation courses and in other ways, would be next to impossible. It would indeed take a heroic administration to face the patrons of a school on such a program with the admission of their sons and daughters to college at stake.

As to the third assumption, it is evident that the time has come for a reconstruction of the college curriculum itself. The colleges admit that.

### Freedom Should Go With Responsibility

The thing that I am contending for is freedom to those responsible for the administration of secondary schools to work out the curriculum for these institutions solely with the needs of the pupils in view. I am not condemning the study of mathematics, or Latin, or science, or history, as such. They will be retained if the educational values which they present warrant their retention. I am contending that these subjects should meet the same tests that all other subjects have to meet. Under the present regime, they are not only favored subjects, but much of their content is of little value to the individual. The effect, then, on these subjects themselves is bad, but I shall not go into this phase of the argument.

The professional outlook of the senior high school teacher, then, is explained by a number of facts. He is to a large extent a victim of circumstances. He is a victim of a sense of superiority that goes with the traditional social prestige which has been attached to the position of teacher in a senior high school. He is the victim of the attitude of a majority of college and university professors who take a scornful attitude towards the scientific study of education. For example, we find men of science who boast the open and scientific mind in their own fields but do not hesitate to express dogmatic opinions on subjects outside of their own fields, especially on subjects pertaining to secondary education. Recently a great physicist, a man who has gained international distinction, has been talking in a very unscientific way about how high schools ought to be run. And finally, the high school teacher is the victim of an archaic system of college entrance requirements.

It should be borne in mind that youth is at stake in all these matters; that there should be a curriculum for every individual, comprehensive and well balanced, extending from the kindergarten through the high school or university or professional school, as the case may be. Under present conditions, youth is subjected sometimes to three educational regimes with little in common as regards objectives and methods, one in the elementary and junior high schools, another in the senior high schools, and another in the college. If the public knew the price, this condition would not be tolerated. The time has come when those charged with the administration of elementary and secondary education should demand a removal of the restrictions which the dead hand of the past, in the form of traditional thinking and arbitrary prescription, places on the development of the secondary schools.

*THE rapid advance in scientific knowledge during the past decade is but an index of what may be expected during the coming years. Science will more and more affect our lives. Intelligent men will keep themselves informed of what the scientists are achieving.*

—DAVID STARR JORDAN

# CURRICULUM CONSTRUCTION AND RECONSTRUCTION IN THE UNIVERSITY HIGH SCHOOL, OAKLAND*

CHARLES E. RUGH
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Director of the University High School, Oakland

THE University High School is different. This same statement may be made about any high school. Schools are made up of persons and persons are always different, and the differences cannot be disregarded without trouble. There are distinctive differences in the case of the University High School that must be noted in order to understand some of the facts and some of the procedures in matters relating to the curriculum.

In many essentials this school does not differ very much from any other California high school. It is one of the 469 secondary schools of the state and is administered according to the laws applicable to such schools. This school is one of the six Oakland high schools, supported and administered according to the policies of the Oakland Department of Education. It is a six year high school of 1467 pupils, distributed by grades or years as follows:

| | | | |
|---|---|---|---|
| Seventh | 205 | Tenth | 330 |
| Eighth | 238 | Eleventh | 238 |
| Ninth | 222 | Twelfth | 234 |

The number of girls is 801. The number of boys is 666.

This school is called "University" High School because graduate students of the University of California are permitted to do "directed teaching," as required by the state law to secure the credentials to teach in the secondary schools of the state. This aspect of the school is carried on according to an agreement between the University of California and the department of education of Oakland. The director, principal, vice-principal of the junior division, dean of girls, and a number of the supervisors are employed by the university—that is, paid by the state through the university.

## The Theory of the School

The school is founded upon the theory that the beginners can do their first teaching without prejudice or detriment to the pupils, provided this teaching is done under direction and expert supervision. There is sufficiently validated evidence to warrant belief in this theory—such facts as the rate of progress, the number of pupils who continue and graduate, and the records of the graduates of the school in the institutions of higher

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* *Curriculum studies have been a major interest at the University High School, Oakland, this school year. The introduction to these studies by Professor Rugh is here presented. On pages following will be found the report of the social studies group, by Miss Edna H. Stone, under the title, Significant Activities in Social Studies Teaching.*—EDITOR'S NOTE.

education. The general reputation of the school may also be judged somewhat by the fact that there is a waiting list of pupils desiring to enter the school.

The general theories of education offered in this school are presented to student teachers in courses at the University, under the general head—"professional methods courses." These are provincially known as the "the 300 courses." They are of three kinds:

1. The general principles of instruction and organization of instruction are presented by the director and assistant directors. In connection with this course, the students are divided into groups numbering from seven to twelve. These groups, under supervision, discuss the problems relative to their classes in their several subjects and write reports upon their group discussions.

2. The problems of management and administration are presented by the same officials, supplemented by the principal of the school, dean of girls, Oakland superintendent, State superintendent, and other persons competent to present the problems of student and teacher welfare.

3. The professional methods courses, under the general term: "Methods of Instruction in . . ." (naming the subject) are given by the supervisors.

The social aspect of the teaching profession is provided for in what is known as the Student Teachers' Association. While this is not distinctly related to the curriculum and curriculum-making, the association provides for excursions and observations that are particularly related to different aspects of the curriculum.

### Some Distinctive Differences

Over one hundred and fifty graduate students are introduced into the school each semester. This process makes a distinctive difference which is of particular significance in relation to the curriculum. These graduate students, in general, teach but one class per day for one semester. From the standpoint of the curriculum, the unit or center of reference in directed teaching, is the "lesson." Lesson-planning is the critical function. It involves curriculum-making at its best. In connection with directed teaching, it is more than curriculum-making. In each case, the student formulates a title for the lesson, states a purpose, and then outlines the subject-matter for achieving this purpose. In this outline, there appear the divisions and sequences. Parallel with the facts and factors in the outline of subject matter are suggestions of method. The last part of the plan deals with outcomes. This is a restatement of the lesson in terms of the subject-matter outline.

The critical function of supervision is "constructive criticism." This involves all the principles and practices of curriculum-making. For this reason, the discussion of the curriculum is a recurrent and continuing problem and since the whole process recurs each semester, it is conducive to curriculum reconstruction.

Perhaps the most distinctive feature of the school is found in the different ranks of teachers.

1. Student teachers who teach one class per day for one semester, under the supervision of a supervising teacher and a supervisor.

2. Regular teachers, similar to those in any other high school.

3. Supervising teachers who are regular teachers assigned to classes, but some of whose classes are taught by the student teacher.

4. The supervisors who have charge of the general supervision of the student teachers and act also as heads of departments in the school.

These graduate students have been in school sixteen or seventeen years—eight years elementary, four years secondary and now in their fifth year in higher education. If you image their school "activities" for these years you will be surprised at the passivity of schooling. If they have been "good students," they have spent much time listening or holding a book up to their faces or pushing a pencil or pen. The events are hardly entitled to be called activities. The facts are, it is the "extra-curricular" events that are called "activities." In all those years the subjects of the curriculum have loomed large. The so-called school activities have been subject centered. Under these circumstances, it is difficult for these beginners to get the right perspective towards the subject-matter and curriculum.

## Directed Teaching

The purposes of directed teaching are stated thus:

1. To wean graduate students from being subject-centered in their thinking about schooling.
2. To win these prospective teachers to being child-centered in their thinking and teaching.
3. To develop (1) professional spirit,
   (2) professional knowledge and
   (3) professional skill.
   a. "Profession" is defined as a form of personal service done in the interests of the one served because of personal need—in this case, learners in need of teaching.
   b. Professional spirit is intelligent and effective enthusiasm and zeal inspired and guided by the desire to help pupils learn.
   c. Professional knowledge is integrated experience effective in successful teaching.
   d. Professional skill is that personal power by which the teaching is made as economic as efficient and as complete as possible under the circumstances.

## Lessons and Lesson Planning

Each student teacher is assigned to a "class" in a "subject," e. g. 9 B Science, 10 A English. Each day for 20 weeks there will be a class exercise, sometimes called "recitation." These series of exercises aim to result in "the progressive improvement of the learner's behavior," defining behavior as "specific responses to a particular situation." The particular situations are determined by the nature of the "subject," e. g. a poem or essay in English, or "Combustion" in Science.

*What Is a Lesson?* The nature of the lesson is determined by the nature of the subject. What is a subject e.g. Botany. Imagine a class in Botany. Distinguish between the plants, text and apparatus which are objects and Botany which is the "subject." Botany is knowledge of, or science of plants, which makes it possible for the teacher to make appropriate responses in situations in which plants are concerned.

"What is the place and function of subject-matter in the educative process?

"A. Subject-matter is primarily matter-set-out-to-be learned. It is the conscious and specific end of school activity (educative process) and the learning activity is exactly and precisely means to this end.

"B. Subject matter and learnings are properly both subsequent and subordinate to some normal life activity or experience (the educative process) already under way from other considerations. Subject matter is called for

when, and because, this life activity has been balked for lack of a certain way of behaving. This needed *way of behaving* as it is sought, found, and acquired, is what we properly call subject-matter. Its function is to enable the balked activity to proceed."

. . . "The essential element in 'subject matter' is probably now best conceived as 'ways of responding,' or of reacting. From one point of view, 'subject matter' will be conceived as the best mode of behavior that the race has discovered; from another point of view, the actual ways of responding that the learner is building into his own character." "New subject-matter is brought into the curriculum as race experience, therefore, to provide patterns of response which the learner needs at any stage of his growth. Learning, for the educator, however, is not satisfactory until the new way of behavior (that is, the new mode of response) has been so built into the learner's nervous system (I would say life—Rugh) that it may be reasonably expected to function efficiently when the proper time comes. The final test of learning is the emergence of appropriate conduct." Twenty-sixth Year Book, pp. 9, 18.

1. A lesson is a unit of subject-matter that requires an integrated group of responses—defined as subject-matter.
2. A lesson is a procedure by which a group of responses is organized or integrated—defined as what goes on in the "class" period.
3. A lesson is what has been so learned that the learner responds—behaves appropriately—as outcome in pupil.

*Lesson Plan.* Lesson planning is going over in the imagination what should happen during "the lesson period." Intelligent, efficient procedure implies three factors: (1) Purpose, (2) plan, (3) procedure. These three factors are exhibited in the three parts of the "plan."

Name Date
Subject—9 B English
Title
Purpose

| Plan | Procedure |
|---|---|
| Subject matter to which pupil gives attention | Suggestions. Directions. Questions by teacher. |
| Class activity | |

The "subject" suggests the general field of attention or general orientation. 9 B English suggests the grade and suggests the subject.

The title focuses attention. This may be done:

(1) By a "topic for discussion."
(2) State of a problem (question).
(3) Proposal of a project.

1. The *purpose* may state the particular knowledge, skill or aptitude to be developed. States the particular kind of "response" to be built into the learner's character.
2. The *plan* proper suggests that to which the pupil is to attend in order to stimulate and direct responses.
3. The *procedure* includes what the teacher does to manage "causes," suggests, directs, questions, approves, disapproves.

## Construction and Reconstruction

"O Aristotle, had you been the freshest modern, instead of the wisest ancient, would you not have mingled with your praise of metaphor a complaint that today we are seldom able to say what a thing is except by saying that it is something else."—George Eliot.

There is no metaphor or analogy for education. Of all the processes in which we are concerned, or about which we can think, education is unique. There is therefore no analogy for what educators do concerning cur-

riculum, if they do what should be done. The terms "constructing," "building," "making," suggest that the processes may be treated as a mechanical or engineering job, like constructing a bridge, building a skyscraper or making a road. It must be confessed that very much of the work done on this "job" has the appearance of mechanics.

"Planning a menu" and "preparing a meal" are also false in their implication. The notion of "planning" and "preparing" have a meaning in relation to the curriculum, but they refer to experiences rather than to things.

*The Doctors Disagree.* Bobbitt tried to apply the technique of natural science to education but he made a sorry mess of it. He undertook to analyze the activities of adults and through this analysis to discover what ought to be done to prepare children for adult life. Recently he has repented from this mistake. In *Religious Education* for October, 1926, he writes in an article entitled "Character-Building and the New Curriculum":

> "We are having to restate our conception of the school's 'preparation for life.' We are coming to see that it is not to be preparation for some vague imperfectly conceived distant future. In general this is definitely to prepare for nothing at all, since that distant future is so completely an unknown quantity. But one's life this evening after school, this week-end, or this vacation on which one is entering, is a foreseen and anticipated reality. For this he can definitely plan and the school can help him to plan and to carry through his plans. The life that is to be prepared for is the ever-moving present. But this is a continuity which constitutes the whole of life. Hold the present behavior high, always hold it high, and the future as it is reached is fully cared for.
>
> "High-grade living in the present has a momentum which projects itself forward into and through the future. Let the moving present be always a high present, and the future is automatically prepared for. The momentum of current wholesome living is the preparation for a continuance of this type of living.
>
> "Except in this sense of momentum, it scarcely seems that life can be prepared for. It can only be lived. But fortunately, living it properly provides the momentum along the lines desired by education; and nothing else will do so."

Charters has tried to apply the technique of job analysis. He has taken account of some of the personal factors in teaching, but his scheme has not been tried in the University High School. The facts are that we do not look upon education and life as "jobs." Nor do we look upon teaching as a job, but as a profession.

Judd talks and writes as if the curriculum were something like the Arabic notation, "formulations to be imparted." These are his words. This example and metaphor exhibit Judd's ingenuity in answering the advocates of pupil activity. It is perfectly true that pupils would never discover this Arabic notation, but Arabic notation is not a type of all curriculum units. The use of this metaphor as a key to curriculum construction exhibits subtlety rather than educational vision.

*Nothing Sacred About the Curriculum.* Briggs says that the curriculum is the "fundamental" and "paramount" problem. This is an extreme statement. Under the present circumstances, curriculum construction is the "hot spot" in educational procedure among university professors. It seems to be paramount to the college professors in their study, but this is not so out in the school where the educational procedure is

going on. Why the enthusiasm and interest in extra-curricular activities, if the curriculum is paramount? The curriculum is an important administrative instrument or tool, and it is well that these wise men and women are working upon the problems involved. Great improvement has already been made. Much waste has been eliminated and much more will be done, but there is a danger in focalizing attention upon means. It is so easy for them to take the center of the stage and be raised into objectives or ends. So many of the curriculum-makers talk and write as if they had been hobnobbing with Procrustes. The curriculum becomes "standard" and sacred, and if the pupil does not take it as prescribed, off goes his school head. Whatever the "higher-ups" do and they can do very much, the actual curriculum operates in the school room, through the pupils and teachers as agents. The pupils and teachers are persons and they operate as persons. The theory herein proposed is that only persons are sacred or inviolate. There is nothing sacred about the curriculum, however well formulated. The curriculum is only a device or plan used to make the learning processes as economical, as efficient and as complete as possible under the given circumstances. In every particular, the curriculum is plastic to the abilities, interests and needs of pupils as particular persons. The regulations for administering the curriculum are not sacred. They are only devices intended to make it easier to live together where so many must use the same space, tools and curriculum at the same time. There is nothing sacred about school machinery. It is constructed and run in the interests of the comforts and conveniences of all concerned. At its best every factor involved in the school procedure is intended to help make the lives of pupils, teachers and officials as abundant as possible.

It is this ethical aspect of human nature founded in the sacredness of personality, that makes education possible and necessary. The critical function of this ethical nature is exhibited in the improvement of behavior. It is because behavior can be improved that educational criticism is so important a factor in teaching. It is for the same reason that curricular formulations or standards are so essential. The pupil must respond to a situation indicated by a curricular assignment. When the pupil responds, there is an "outcome," a resultant in the life of the pupil. If this outcome is satisfactory to the teacher, the pupil is "passed." He passes on to other situations requiring other responses. If the pupil's response is not satisfactory, then what happens? Where the teachers or officers think grades or regulations are sacred, the pupil "fails." Under these circumstances, tests and measurements are likely to be taken to stand for what the pupil is, rather than diagnostic as to what needs to be done. Where pupils are sacred, when regulations and grades are conveniences, "educational criticism" occurs and the learner is stimulated and guided into ways of improving his behavior, that is, making it better. In order to make it possible for the pupil to improve his behavior, it may be necessary to reconstruct the curriculum. At this point, we come upon two diametrically opposed views of the school. Which is to be saved, the curriculum or the pupil.

The theory here proposed is that "curricular reconstruction" is a function of good teaching and that the administrative formulations of the "higher-ups," if you please, are conveniences and economic policies to be followed only up to the point where they fail to function in the interests of the progressive improvement of the pupil's behavior. Curricula have always been failures. Why continual reconstruction? It is only under the most extraordinary circumstances that high school pupils should fail. In well administered school systems high school pupils are not "defectives." Normally, boys and girls that complete elementary school requirements get by the "thirteenth year." Such pupils are capable of further education. Administrators may raise the issue whether further education is economical, but it is not theirs to say that further education is impossible.

Pupils may be delinquent. That is entirely another matter, and such pupils are to be treated in terms of the forms of the delinquency involved and not in terms of their curricular achievements.

It is true that mass education requires a machinery that cannot always be respectful to the individual and personal differences of the pupil. As schools are now administered, it is true that grading and promotions are necessary procedures in the interests of economy. But here again the necessity for such procedure is just as likely to prove embarrassing as efficient.

Judd's emphasis upon "grade placement" as a final solution of the problems of education in general, and curricular problems in particular, emphasizes two false assumptions. The first one is that there are fixed grades in the sense that he uses the term. There is nothing in the nature nor the life of the child to warrant any such assumption. The eighth-grade lockstep system was "made in Germany" and was imported into America. For mass schooling, it is an economic expedient for convenience, but every wise teacher knows that, while it may be an economic necessity, it is very frequently an educational embarrassment, not only in relation to particular pupils, but often to whole classes.

A second false assumption is that such material has been, or can be formulated into curricular blocks, or educational building bricks that can be appropriately "placed" in a given grade. There is as yet no warrant for any such assumptions.

## Educational Objectives

It is agreed by every competent educator that intelligent and effective curriculum construction implies a careful selection and formulation of objectives. In many respects the term "objective" is a very unfortunate one. It is borrowed from military strategy and many persons using it allow it to stand for something, or anything resembling the objectives of a general of a military campaign. When faculty psychology and the dogma of formal discipline fell into disrepute, and nothing was substituted in their place, it seemed natural enough to look outward for ends or aims. It was natural enough to call them objectives. The outward look is the natural direction to look for any objective. Again, this is the scientific age, and science must be "objective," whatever that means.

In this age of machinery, we have the persistent habit of following every process in the time sequence—as cause and effect. In its relation to time and space and in its onward going as developmental, life is that kind of a thing, but as a totality, life is bipolar; and while the procedures of the educator in modifying the situation to which the person responds are important and call for all the intelligence possible, particular persons have their own dynamic life patterns. Each personality takes up into itself its own experiences and integrates them into powers, purposes and plans for conserving its own existence. This is why Courtis makes "the integration of personality" "the ultimate objective of education." It is hardly an objective at all. It is rather a vision of the successive outcomes. Power to purpose, to plan, and to execute plans in the interest of achieving purpose is of the very essence of personality. The power, ability and disposition to co-operate with the purposes of other persons is of the very essence of social progress.

It will be accepted without argument that when an activity, a task, or lesson, or project is finally set, and pupils and teachers accept the situation, then that procedure should be carried forward in the best manner possible. The ethical nature of personality and society demands the best. Bobbitt is quite right when he says that "living the present on a high plane is the best possible preparation for the future." This formula must be analyzed. Every event has its antecedents and its consequences, and the highness or lowness of an event is determined by its relations as well as by its essence. For the present the most baffling problem facing educators is *how much of the past and how much of the future* should enter into the purposing and planning. What of the future? How far into the future should the consequences of the present project be projected? What events of the past? And in what way can any past events figure in the planning and execution of this present project?

Judd is also quite right in proposing that societies "formulations" should be "imparted," provided we use the term imparted to stand for "learn" in the sense that term must be used when applied to such social formulations as the multiplication table or the spelling of a word. This schooling formula, however, applies but to a small fraction of the total educational procedure.

In theory, the life of the pupil in the situations in which that pupil is now living furnishes the factors necessarily involved in that pupil's learning. Every requirement that a pupil feels is foreign to his life is by that fact barred from yielding the largest possible educational dividend. The pupil may be in error in feeling as he does, but that does not eliminate the power of the feeling. This feeling interjects into the teacher's consideration and planning. This is why curriculum construction is a continuing co-operative enterprise. This is why the two new keynotes in curriculum reconstruction are so significant. The life of the learner as that learner is living it here and now (personality), and the spirit of American life (present social progress) furnish the correlative critical function that must be considered in making a curriculum fit for American democracy.

# SIGNIFICANT ACTIVITIES IN SOCIAL STUDIES TEACHING

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NOTWITHSTANDING the need for improvement, instruction in the social studies is assuming a hopeful aspect. As a result of insistent appeals and earnest demands for better teaching of the boys and girls, in answer to these calls for aid, there have been produced, promoted and practiced, innumerable panaceas, vital constructive improvements, and promising solution programs. As the nature of the child, himself, has been given more consideration, and as various philosophies and psychological and pedagogical influences have been felt, many teachers have subscribed to plans for vitalizing the subject, for socializing the recitation, the classroom and the child, and for motivating the learning situation. The restless suspicion that all was not well is giving way to the hopeful conviction that:

> "The plan of education toward which the profession moves is concerned, not primarily with knowledge, but with activity. Instead of knowledge of textbook sort, as we have conceived it there should be subjective activities which are continuous, vigorous, diversified, abundant, and fruitful. They should be the constituents of high-grade intellectual living. Intellectual life of proper type is not an engulfing and a nursing within one's self of inert unassimilated bodies of knowledge."[1]

Activities on the part of the individual, activities in teaching procedure have come to be stressed, sometimes, to be sure, beyond the point or outside the field of significance. It devolves upon the teacher to use discrimination in suggestion and guidance.

*Definitions.* Accept, for the purpose of this discussion, the following definition of the term, "significant activities:" *Significant,* in the sense of that which has meaning or import for life; a lasting and permanent building-in of tastes and insights, habits, personality,—as distinguished from the passing fancy, the "busy-work" types of occupation that may have little permanent value. *Activities,* the actions or undertakings to which the individual gives himself more or less whole-heartedly; the voluntary out-giving of his effort and energy to attain an end he wishes,—as contrasted with imposed tasks he fulfills for the sake of credit, or out of habit of obedience, or because it is the line of least resistance.[2]

*Activities Without Purpose of No Avail.* If, in actual learning, changes must take place in the learner,[3] the most effective procedure for bringing about these changes should be utilized. Exercises which are merely stimulating and interesting have no place in an economical scheme.

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[1] Babbitt, Franklin. In the Twenty-sixth Yearbook of the National Society for the Study of Education, Part II, p. 49.

[2] Expressed nearly in the words of Miss Crystal Harford, Social Studies Department, University High School.

[3] Morrison, Henry C. *The Practice of Teaching in the Secondary School,* The University of Chicago Press, 1926.

An activity without reason for being and a conceivable purpose is of no avail. If there be no point in the activity, if it be not contributing essentially to the integration within the child of uplifting standards and ideals, worthy skills and habits, or functioning basic knowledge, then it should give way to one which is significant. It is just as important to do away with wasteful devices and materials, to set aside useless theories, to eliminate futile activities, as it is to provide protected and inspirational conditions of development.

The significant activity is o moving force in the educative process, no matter what specific organization of steps in this learning process is subscribed to.

*Learning How to Live.* If one believes that through the educative process, the human being learns how to live, if the successive steps in the process are adaptions, the essence of each being a change in the individual in attitudes, abilities, or skills,[4] then the consumation of these adaptions should be promoted by the teacher and guide. It is of supreme importance that those who pose as leaders of child learners keep always in mind that the child should as often as possible participate in real life activities. Next best to this is the vicarious experience which will aid in bringing about a change in attitude or the acquisition of a new ability or skill.

*Constructive Creative Activities.* One may follow certain educational leadership[5] and accept the statement that where there is interest, attention may be secured; that purposeful effort will be the next step; and that then would follow achievement that abides. Experience tells the teacher of the social studies that this abiding achievement comes more readily and more surely to pupils through the use of various pertinent material devices and constructive creative activities, than through the use of words, alone.

Everything else being equal, there is greater interest on the part of an individual if there be appropriate experience, graphic, dramatic and manipulatory. Interest favorably affects management, attention comes through purposeful effort, and effort results in experience. The individual achieves, accomplishes,—a learning product is secured. If this process results in complete mastery, the achievement will abide.

*Observing, Thinking, Understanding, Using.* One educator[6] teaches that in the learning process there are "way stations;" the first and simplest step is *observing,* a more advanced and complicated is *thinking,* and the most complex is *understanding.* Nor is the process yet completed, for the critical function of all learning is *using.* Now, in observing a unit in the social studies the employment of the senses is essential; thinking the thing through calls upon the imagination and makes demands upon various activities, according to the nature of the unit to be learned; and for thorough understanding of this unit, the learner must utilize the highest type of reconstructive and creative activities. This, then, should be fol-

[4] Ibid., pp. 22 ff.
[5] Caldwell, Otis W., Lincoln School, Teachers' College, Columbia University.
[6] Rugh, C. E., Professor of Education, University of California.

lowed by the use of that which has been learned, in actual life situations, or, vicariously, through other activities.

*Objective Aids.* There should be objective aids at hand, materials and tools and a workspace available for constructive illustrations and demonstrations and encouragement of all effort. There are many strong advocates of the plan of giving this workshop atmosphere and equipment to every social studies classroom, and having the activities therein partake of the laboratory nature. Admirable examples of such provision are described in books[7] and articles[8] and a study of activities carried on reveals extraordinary results.[9] Almost invariably the use of such a workshop and the results therefrom give undeniable assurance that it is a vital, functioning factor. Even though there be the handicap of crowded classroom space, encouragement for this sort of vitalizing work is feasible, and is being furthered by a rapidly increasing number of good teachers.

*Action and Mastery.* Action, movement, doing something is perfectly natural to the adolescent, especially of the junior high school age. As a rule, he is active enough, his energies only need direction. Give him opportunity and encouragement, control the circumstances which may distract attention, produce conditions favorable to participation in activities which are meaningful, and a long step towards mastery will have been taken.

The activity should always have a purpose. That purpose should be in line with the objective to be achieved. It must not be lost sight of that it is expected that some change will take place in the learner. No teaching can be done except there be something taught, and there can be no learning without there be something to be learned. Content, or subject matter, which is being used to help bring about this change is composed of various *units.* In learning each unit appropriate activities should be directed towards *observing, thinking, understanding,* and finally *using,* this unit, or the principle, or attribute embodied within it.

There are various degrees of difficulty and complexity in the steps to be taken. Comprehension of the external or physical, of the objective, is the easiest, the most elementary in character; intelligence as to words and actions is more difficult, more intricate; and appreciation and understanding of feelings, emotions, thoughts is the most complex and advanced step.

If a significant activity be employed the child will be interested, aroused, thrilled; and he will strive to take all of these steps that he can, to gain as far as possible the satisfaction or the reward which comes with the complete learning product.

*Objective Teaching Aids.* Activities utilized in the pursuit of products of learning vary greatly in their nature. Even the simplest steps in

[7] Knowlton, D. C. *History and the Other Social Studies in Junior and Senior High Schools,* Charles Scribner's Sons, 1926, is a notable reference.

[8] Kidder, Louise L. *A Social Studies Laboratory,* The University High School Journal, Vol. 5, pp. 196-207 (Oct., 1925).

[9] Knowlton, D. C. *Making History Graphic,* Charles Scribner's Sons, 1925.

the process are more successfully taken if *available objective* teaching aids in the form of devices are made use of. Texts, other books, periodicals and newspapers, the blackboard, maps, charts, diagrams, graphs, pictures, plays, debates,—these and many other aids contribute greatly to seeing the thing to be learned, and even to reflecting upon it and to understanding it thoroughly. "Good illustrations catch the attention . . . , quicken the imagination . . . . kindle the emotions . . . aid the reasoning . . . and assist the memory." [10] Real objects bring the pupil and the teacher face to face with the real situation taught—Washington, the capital city, itself; the Statue of Liberty; an oil well, from which oil does come; a dependent child being cared for in an institution. The next best thing is some sort of representation of what is being taught—a picture of the city of Washington; a model of the statue of liberty; a diagram of a working oil well; a photograph of a child in an orphanage.

*Constructive Activities.* Observing and becoming intimately acquainted with these objects or with their representations is a most needful type of activity. The various senses are called upon to aid mental activity. There is a type of activity which is more complicated, it is of a more *constructive* and *creative* nature. It is evidenced in the things the learner himself does while he is mastering the learning product. The results of this kind of activity on the part of the learner may be listed as (1) *constructive handwork activities,* the constructing of graphic products, such as poster-maps, models, cartoons, problem-maps, vocabulary posters, graphs, charts, and time-lines; (2) *dramatic activities,* such as producing impersonations and acting dramatizations; (3) *written productions,* such as poems, diaries, letters and speeches; (4) *reconstructing and revivifying activities,* the vicarious reliving of the experiences and thoughts of others, through investigation, by reading, listening to others, taking field trips, and by group discussion; (5) *personal participation* in actual life situations, such as conducting group organizations, taking part in student government, and finding a place in community welfare work.

Pupils of both junior and senior high schools participate in the two types of activities. Given opportunity and encouragement, they use the various material aids within their comprehension; and, more than that—at all ages they have a degree of constructive, creative ability. The activities that appeal depend not merely upon the age of the pupil, although, to be sure, both physical and mental ages do make a difference—individual characteristics largely determine the matter.

To reiterate; at the teaching stage in the learning process, the made-by-others, ready-to-use tools or aids play an important part, particularly in the *observing* step. Then, as the learner makes progress he gains experiences which lead him to explore, investigate, represent, construct. This sort of activity carries him on, he begins to *think* the thing which he is trying to learn, and finally to *understand* it. Sometimes the cycle of ac-

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[10] Avent, J. E. *Beginning Teaching,* Joseph E. Avent, University of Tennessee, 1926.

tivity types repeats itself while the steps are leading to the final mastery, which is the ability and desire to *use* that learning product.

This constructive, creative type of activity is evidenced in the junior high school child as he readily illustrates and demonstrates, through various constructive handwork activities, the events, characteristics of people and of things, and to some extent, thoughts expressed in his reading.

### Forms of Creative Activities

One of the simplest forms is the collecting of pictures, cartoons and articles and arranging them to tell the story, although there may be little or no constructive work other than the mere collecting and arranging. This is in evidence throughout the grades. An excellent example is the collection by senior American history pupils of two sets of the series of "Historic Milestones" pictures from the *Youths Companion* of a few years back. These they assisted in preparing and mounting.

Few of the children are satisfied with this form alone, but feel impelled to make something. Crude representations, many of them with cartoon characteristics, appear. Lettering, which is being learned in the art classes, helps to explain the story.

One of the favorite forms is the poster-roll, with a roll of many yards of manila wrapping paper serving as the basis for mounting. A class elects to illustrate in this manner the story of a whole problem, for example, "How improved methods of transportation and communication have brought the people of the United States closer together." In this kind of project small groups take charge of a particular feature, and each individual helps his fellows, as he finds materials, or has inspirations which he works out as pictures, diagrams, or slogans. All learn the whole story and begin to see what it means in their own lives.

Large manila sheets may be used, each member of the class undertaking to illustrate one page showing a phase of the problem. Significant pictures are brought, others are drawn, even painted; maps and diagrams, cartoons, slogans, quotations appear. These form a huge loose-leafed book, and serve as inspiration to the makers and to others.

Vocabulary cards are made as there is occasion for introducing new words. The word is printed correctly, the illustration shows the child's interpretation and understanding of the word, and, as a rule, a definition is given. For example, on one card is found, printed in large letters, *Anti-slavery;* defined, *against slavery.* A cartoon figure, black, is dragging a huge black ball at the end of a long chain, and a white figure, with axe in hand has just cut through the chain. Below this is found the printed word, *Pro-slavery;* defined, *for slavery.* Here is a kneeling black figure with chain and ball, and the white figure stretches over his head a menacing, possessive arm. Another example is to explain the word *Protectorate.* Below the printed word is the statement, "England, Germany and the United States were protecting the Samoan Islands." Then are pictured the maps of the three countries, in outline, each with its own flag stretched across it, and at a strategic point on each map is placed a wide open eye.

This eye, in each case, is fixed upon the Samoan Islands, a dotted line extending from each eye to the islands.

Important-date cards are made in a similar fashion. Illustrated maps make the countries studied teem with life and meaning. Events, movements and re-view summaries are pictured in all sorts of ways. Seventh grade children, in illustrated topic sentences, have told the outline of the story of exploration, colonization and independence. One collection shows over forty, the sketches most graphically picturing such statements as, "Balboa's discovery of the Pacific led to greater things." "The Indians were the perils of the country. They scalped people."

The same general type of illustration is continued and adapted in the higher grades. Scarcely a day passes that some pupil does not bring in a production, as an individual project or as a contribution to a group project. The collective or group book-project is popular. Pupils in ninth grade who find no one book on California answering all of their questions set to work to write and illustrate their own. Also they graphically portray the illuminating features of the vocations they like best, comparing them with others and showing how they analyze themselves. A girl in studying world history conceived of China as a sleeping princess and with a series of beautiful colored sketches told China's story. A ninth grade class produced an illustrated book, which they bound, under the title, "Masters of the Renaissance." The following copy of the preface page describes the book-project.

PREFACE

Our purpose in writing this book has been two-fold; we wish to gain some added and definite knowledge of the great leaders of the Renaissance, and we hope to leave this little book as an aid to future students of history at the University High School.

In this book which we have named "Masters of the Renaissance," the greatest artists of the period are represented by reproductions of their paintings and stories of their lives. We have discussed briefly the lives and contributions of the scientists, Copernicus, Galileo and Kepler; we have prepared essays on the historians, educators and literary men, and have tried to show their influence on our modern life. We have written accounts of the great explorers who left Europe ready to begin an era of progress and overseas expansion.

We do not attempt, however, to recount all the events of the period. We only hope to give our readers a lasting impression of the wonderful rebirth of culture which has meant so much to modern civilization.

KATHERINE KINSEY.
DWIGHT FINN.

"Catch words" in senior high civics are listed, defined, and in many instances their use illustrated by cartoons the purport of which is explained. These are assembled in portfolios or bound into book form. "The Desirable Home" as a social problem, is studied from all angles, and every type of illustration is used to make the resulting booklets representative of the pupils' honest and optimistic conception of the ideal.

As pupils grow older, as they gain power in mental efficiency and technic, less of the narrative is portrayed, the cause and effect, the step-by-step progress, institutional development, comparison and contrast, and the more

complicated unravelling of their own problems attract attention and excite activity. The cartoon technic continues to appeal. The chart, the graph, and the problem-map work often depicting, in series, a complicated combination of political, economic and social features in geographic settings, gain steadily in favor. Organizations and functions of governments, statistics in economic or social problems, are made graphic in this wise.

There are pupils who find expression through carving and modelling. Bars of soap and plasteline are media used. An over-aged boy in the seventh grade seemed to react to no stimulus. A teacher one day noticed him rolling a bit of clay between his fingers and gave him a piece to take home and do with it as he pleased. The next day he came bearing with him a figure of Sacajawea, the Bird Woman. He brings in a figure or a group every week or so. He found that he could do some one thing very well, and gradually he began doing all things as well as he could. His interest and talent are being capitalized in his science, art, and English work. The satisfaction of accomplishment, the joy of achievement, of success, is markedly in evidence in this case.

*Creative Dramatization* is an activity most successfully used, as it quickens interest, kindles the imagination, and makes characters and incidents seem like life. Realistic dramatizations cannot be written, and true-to-life acting and speaking cannot take place without the necessary degree of research and understanding of true conditions.

Especially with junior high school pupils, imitation is natural and the dramatic instinct strong. Impromptu impersonation and dramatization, presenting the element of challenge to make good, often work out well. The informal is nearly always more helpful than the thoroughly practiced and polished product. A group of eighth grade pupils worked out a play, "How the United States Became a Great Melting Pot," and by the time the play was produced the children had learned the lesson involved in the problem.

It is a fairly simple matter to know that certain events took place in the past; to think through the meaning of these events and of their relation to each other is a more difficult task. Real understanding comes in knowing who were the people concerned, what they were like, how they lived and what they thought; what contributed to these events, what were the results, and what they mean to us today. The pupil who can think as those men and women thought, who can get back of the actions to the mental processes,—he is the one who reconstructs most vividly and completely. In creative dramatization, the child, through investigating the actions and events which he reads about, strives to know the mental processes of his chosen characters. As he conceives that their minds worked he directs his mind to work and he speaks and acts accordingly, recreating the human participation in the event.

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[11] Barrett, Lynn M. The University High School Journal, Vol. 6, pp. 240-280 (Nov., 1926), describes devices and activities worked out by himself, Miss Olive Stewart and others. Mr. Harold Aten and his pupils are developing appropriate ones.

### Correlation of English and the Social Studies

All of the University High School teachers are vitally aware of the virtues of this activity feature, and it is given special consideration. There is a unique situation in the first year of the junior high school which decidedly furthers this procedure. Each seventh grade group is with the same teacher two periods a day. The teachers are prepared to teach both English and social studies. There is a happy correlation of the two, English learning functioning through social studies learning, and social studies content vitalizing English study. The English supervisor and her staff conceived the idea of making the most of the adventure spirit, in exploring and discovering in the new school environment, and built their activities course around that idea. The social studies teachers considered that the adventure idea would carry out the progress in the child to which they hoped to contribute through the subject content they thought best to use. Among the activities which work well in this combination, pretending to be some one else seems to offer rich contributions. Scarcely a period passes without the children impersonating characters, in fiction or history, or dramatizing incidents. Ofttimes this activity serves as a means of overcoming self-consciousness. It affords opportunity for working out social adjustments within the group. It is decidedly worth while, "To make children not clever competitors in the world as it is, when we should have been helping them to become creative co-operators in making the world as it is to be."[12] This shows that there is a vision of the future, as well as a purpose in the present.

In the eighth grade, four groups of children, having investigated their own ancestry and studied of the arrival and subsequent experiences of immigrants to this country, decided to have a joint dramatization which they would call "The Melting Pot." This involved careful preparation of details concerning life conditions in home countries, adjustments in this, and present conditions. Needless to say, the inspiration to do this was not lacking, and results were gratifying.

A few years ago a group of children became intensely interested in the early settlers of the locality in which they live. This led to investigation and it was learned that at one time the regional name for this East Bay country was "El Rancho de San Antonio," and that the large ranch was owned by a family by the name of Peralta. The pupils and their teachers dug out the history, even using the will of Don Luis Peralta, and *wrote* a play, which they acted, before their own class and others, and before a methods class at the University.[13]

Fruitful occasions of dramatization are without number. Some classes in ancient or early world history use Caroline Snedeker's *The Perilous Seat* as the key to open the door to understand Greek life. Pupils have

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[12] One of Miss Ruby Larson's favorite quotations from Glen Frank's writings. Miss Larson is one of the teachers of low seventh grade.

[13] Vernon, Mildred H., and Ross, Mary. The University High School Journal, Vol. 4, pp. 199-210 (Dec., 1924).

dramatized portions of the story, certain ones being the writers of the play, others forming the cast, and the presentation being given under a pupil director. A feeling of co-operation was fostered and further sense of responsibility developed.[14]

Similar values attend the dramatization of such processes as the naturalization of an alien, an organization of a form of government and an economic or social agency and its functions, such as the work and life of a factory employee.

*Written productions,* such as stories, poems, diaries, letters, and ships' logs give admirable outlet for the creative spirit. Here, again the relationship of the social studies and the English program enriches the social studies product, for the vehicle of learning is motivated. The young children are the more spontaneous and less self-conscious and exacting than the older ones; as a consequence a larger percentage of a group voluntarily react in this way.

The centralizing activity of the beginning classes, the adventure, suggests self-expression, and it often materializes in verse. A few typical productions are here given.

THE VOYAGE

(This poem was written in carrying out the adventure idea in studying the Old World Background. The same pupil wrote an interesting poem entitled, "The Shot Heard Around the World," while studying the Revolutionary War.)

DAVID DEANE

*Low Seventh Grade*

Three ships went sailing out of the bay
Out to the open sea
To distant lands far, far away
In search of gems for me.

They will find treasures in Cathay,
Some in the city of Rome.
They will see the wonders of old Pompeii
Before they sail for home.

Three ships come sailing out of the west
Out of the open sea—
Their holds are like a treasure chest
Coming home to me.

THE LEGEND OF TWIN PEAKS

(This original legend was written by a pupil in a class that was making a study of the American Indian. Twin Peaks are in San Francisco, across the bay from Oakland.)

NINA GLINCHHOFF

*Low Seventh Grade*

Standing alone against the blue sky the Twin Peaks are kissed by the golden sunbeams and the gentle winds. There they always stand together in loving attitude.

Long, long ago there were twin brothers who loved each other dearly. One was never without the other. Their father who was an Indian chief would stand in the door of his wigwam and watch the two play, rolling over each other and shouting in glee. Ah, indeed, he was a proud father.

Time passed as time will and the brothers were youths. Such brave warriors were rarely seen. With them on the battle field, the battle was already won.

[14] This is a plan used by Miss Ross. Other activity features are introduced by Mrs. Grace Mason, who is a teacher of Latin as well as of Social Studies.

But, "Alas" and "Alack," one day as one of them was going through the forest with his bow and arrow a traitor shot and he fell dead.

When the other heard of his brother's death, then loudly he lamented and prayed to the great gods. He prayed that the god might join once the two brothers. The great spirit heard his prayer and took pity on him so he changed the two brothers to the twin peaks.

So they still stand guarding the city of San Francisco.

The English Department conducts a junior high postoffice as a unifying activity in the high seventh grade. The teachers[15] who have the combination classes find that the pupils profit in their study of such units of subject matter as the westward movement of peoples, transportation and communication, if they employ this unifying activity. Here the writing of letters, journals, and diaries is of great advantage; and pupils continue to write verses.

WESTWARD BOUND

(This poem was written while studying the problem: "How the United States Spread to the Pacific.")

VINCENT DUCKLES

*High Seventh Grade*

Bring your plow and bring your corn,
Bring your gun and powder horn,
Bring your axe and bring your knife,
Bring your sons to face the strife.

We have sung this same old song,
We have sung this life too long.
Westward is our battle cry,
Westward we will push or die.

We know what hardships we must face
To win that free and open space;
There are mountains, there are hills,
Trackless forests, rushing rills.

The hostile savage stalks apace
With tomahawk and painted face;
We face danger every hour,
Yet we will win our way by power.

Nothing daunting we are bound
To plant our homes upon that ground;
There our families we will rear,
Thrive and prosper year by year.

Again, in the tenth year, while giving attention particularly to world history, many pupils act upon an inner urge for creative outlet. It is often found that a child who does not successfully take part in ordinary classroom procedure will dare to express his thoughts in verse; and even though the product be crude, that child's spirit is liberated and the way to freedom may have been pointed out.

The self-expression reaction to the teaching being done is often accepted by the teacher as the measure or test of understanding and of making the adaptations which should result. A few typical productions are here given.

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[15] Mrs. Minnie Aldrich and Miss Julia Hennessey at present have this work.

## THE FRENCH REVOLUTION

(Written while interpreting that movement.)

BILLY WOOD
*Low Tenth Grade*

For many years a storm impending,
Hung heavy over France;
At last it burst and struck the country,
Like the blow of a lance.
The guards fought well indeed.
The statesmen did all they could,
But at last the people conquered
As nobody thought they would.

The aristocrats left the country,
To rouse the nations round,
And down these Revolutionists,
Of which France did abound.
The nations rose on every side,
To aid the First Estate,
Men were sent and put to arms,
But all was done too late.

Emigrés put up a desperate fight,
And for a while they won,
But soon with better generalship,
The last hard battles were done.
The Third Estate had won its freedom,
All the world had held its breath,
At the boldness of this venture,
Equality, Fraternity or Death.

## A LETTER

(Class exercise written in answer to the following suggestion: "Imagine yourself to be a member of the bourgeoisie, living in Paris during the Reign of Terror. Write a letter to a friend in England, telling him about the general situation in Paris and the country and your own feelings in regard to the movement."

Paris, June 10, 1793.

Dear friend:

I cannot say whether this letter will arrive safely or not. The Commune of Paris has established a strict censorship of the mails. I would like to move from my house on Rue St. Honore but I doubt if it would be possible, as the assignats, or paper money which I bought when they were first issued, have depreciated rapidly and I cannot afford it. Every day the tumbrils roll past my house loaded with those whose only crime is not shouting over the Republic. I did, as you know, support the constitutional monarchy with all my heart, but it seems that despotism is as bad as the old. The King, however, was incompetent, though I question the wisdom of executing him, as it has brought the wrath of all Europe down upon France.

Paris is not as disturbed as one might think. Few of the citizens are molested and business goes on as usual. The people are required to address each other as "citizen" and "citizeness" in place of the old "monsieur" and "madame," which is supposed to smack of the old regime. The instrument used in killing the victims is called the guillotine, named for a Dr. Guillotin, its inventor. There is no doubt in my mind that it is more merciful than the old way. I am glad that it is so, for I fear that I am to be one of its victims soon. The Marquis of G———, who you know was one of the few nobles

who tried to help the peasants, came to me, asking me to assist him to escape. The Terror spares no one of noble blood, be he good or bad. I helped him and had the satisfaction, the other day, of hearing that he was safe in England. I am sure, however, that I was spied upon, and I expect to be cast in prison any time. Once there, I am doomed, for the Revolutionary Tribunal knows no mercy. I have no relatives you know, in France, and few friends beside yourself. My life is valuable to no one but myself and I dare not set too high a valuation on what I expect to lose—I hear the pounding of the deputies on the door below. Adieu, my friend—I am doomed——

BETTY LAWTON (*Low Tenth Grade*).

### THE TERROR

(This shows an understanding of the meaning of the period.)

GEORGE SWARTH

*Low Tenth Grade*

High flames against a dark, forbidding sky,
Bright, rushing flames through doors and windows show.
A crash. The leaping fire leaps still more high.
So falls another stately old chateau.

Two upright pillars and a sliding knife.
Cheers, as a guarded figure comes below.
A whir—a crash—so ends another life.
Before the mob things good or bad all go.

Arson and murder by law, with no redress.
By these brute paupers, lacking mind and heart,
Are killed the noblest of the old Noblesse;
At their hands perish France's finest art.

While visualizing the setting for the progress of man in America, one boy expressed his conception of the early settlers, and the poem reflects the spirit of his tolerance and welcome. In the next production he has given a poetic description of his idea of a well planned city as he conceived it while studying the problem in twelfth grade.

### THE PIEDMONT

ARTHUR M. ARLETT

*Low Eleventh Grade*

Oh, come with me to the Piedmont, men,
To the hills that distant lie,
Where a man can be supremely free,
His only roof—the sky.
Oh, come with me to the borderland,
Untouched by city's stain,
Where we may toil and till the soil,
And manly freedom gain.

To the immigrant:

Oh, come with me, thou immigrant,
And help me plow the sod,
And in your peace, all kings release.
Look for your help to God.
From sunny France and the British isles,
The trails all westward go;
So come with me across the sea,
And you shall freedom know.

To the runaway slaves:

Oh, come with me, all you slaves of men,
To Piedmont make your way,
Where the colored face may find a place,
To work and see the day.
Oh, come with me where no man's hand,
May raise a whip to strike,
Where dark and white, and day and night,
Were made by God alike.

To the ex-convict:
Oh, come with me, men of bad repute,
To where men must be true,
And where like men, you may start again,
And build your lives anew.
Oh, come with me to the valleys green,
Or with me the mountains climb.
And leave behind, that all may find,
Your mark in the sands of time.

To the freedmen from the South:
Oh, come with me to the wilderness,
All you freed men from the South,
And settle down at the mountain's crown,
Or at the river's mouth.
Oh, come with me where all men may,
An honest living earn.
And where such gold as rich men hold,
Brings back no more return.

To the religious fanatics:
Oh, come with me, you religious men,
Who hold your creeds alone,
Where men are fair, and sacred prayer
Each man may call his own.
Oh, come with me and bring what faith,
You hold to be the best,
And press your way where many may pray—
To Piedmont, and the west!

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Oh, come with me to the Piedmont, men,
To the hills that distant lie,
Where a man can be supremely free,
His only roof—the sky.
Oh, come with me to the borderland,
Untouched by city's stain,
Where we may toil and till the soil,
And manly freedom gain.

*Revivifying Activities.* Reconstructing and revivifying activities, further than those discussed, are varied and essential. Wide reading, research, listening to lectures and speeches of those uniquely equipped, through experience, to pass those experiences on; making school and community surveys for the purpose of building up attitudes and understanding which will eventuate; participating in field trips to help in clarfying impressions and furnishing first-hand evidence; conducting inter-class and inter-department visitations in order to further unify objectives and their achievement; building up stores of reference and illustrative materials for their own use and that of others; searching out and conducting ventures in appreciation development, in the form of appropriate drama, screen productions, art exhibits, and musical programs—all of these are vital activities. They help boys and girls to know how others have lived and do live, as well as being part of life's experience while taking part in them.

*Reconstruction of Life.* In connection with American history teaching a plan is in use which contributes greatly to reconstructing life and actions, of the past and of the present. Reading lists are always at hand—lists of historical fiction and plays, biography, travel, poetry, short story—of any phase of history in which a pupil might be interested. The unique system of reporting and recording, by means of card files, and the plan for using results to vitalize class work, together with the value of this activity in character building is worth further investigation.[16]

*Personal Participation in Organizations.* The more definite and specific the personal participation can be the better it is. There is inestimable value in classroom organizations, if procedure is well guided. In nearly all of the classes this is found; leadership is developed, and worthy followers are trained—and this is chiefly done by the pupils themselves.

[16] This activity is described by Miss Olive Stewart, in the article on character education by Minnette MacKay, in the University High School Journal, Vol. 5, pp. 237, 238 (Oct., 1925)

One of the eighth grade teachers has described the plan carried out in her classes.[17] Closely related to various courses, pupils get excellent experience conducting group organizations; taking part in student government, on committees and as officers, thereby *using* that which they have made progress in learning,[18] and becoming real workers in school and larger community welfare projects.

Considered in its larger connotation, "significant activity" can well be applied to the continuous procedure of the whole semester. This procedure is a project, "an intellectualized, purposeful unit of activity."

*Learners Project Themselves into a Larger Life.* For example, the tenth and eleventh year history classes recreate the life and experiences of the various peoples, re-live their lives, see them as interrelated forces and forerunners of the civilization of today. With a well balanced use of such activities as have already been mentioned, together with research and animated, purposeful group discussions, the learners more vitally appreciate that they live in a world where they should tear down a tendency to narrow national lives and project themselves into international planes. Towards the close of the study a large unit of the course pupils often elect to sum up their findings and new impressions by means of an exercise in which their creative effort is in evidence.

*Orientation of Pupil Through Group Activities.* This unification of activities into a semester project is well exemplified in the advanced classes studying their complex problems of life, through the courses dealing with economic, social and political problems and current history. They develop, rather naturally and wholeheartedly, a flexible program of activities. The most significant feature is the insistent, often almost impatient attempt of the pupil to orient himself in society, and to decide upon his own attitudes and responses to the situation he finds confronting him. The most natural way for him to set about making this adjustment is to talk with his fellows and his teachers; hence the class organizes into a discussion group.

*Learning Stimulated by Exploration.* Problems are introduced by pupils and teachers, and brief preparation or exploration takes place and all read widely. They always wish to "go to see"—what the health center is really doing, how the juvenile court works, how the blind are being taught—to further their investigation and understanding and find out whether or not the actual situation and what they read mean the same thing; also, if, perchance, they may be able to do something about it, at the present time or later. Their own experiences and those of acquaintances are drawn upon. Speakers and workers in the field talk with the pupils. Serious discussions continue. Pupils frankly and earnestly present their own personal problems, such as, "Is it dishonest to beat your

[17] Thurston, Helen. The University High School Journal, Vol. 6, pp. 328-334 (Jan., 1927).

[18] Miss Crystal Harford described how class activity functioned in aiding the development of student co-operative government. The University High School Journal, Vol. 3, pp. 193-200 (Oct., 1923).

way into a football game?" "How nearly of an age and how similar in nationality and tastes must two people be to have a happy marriage?" And they become curious and really want to know. "When did people first have wages?" "How did we ever come to have a traffic officer out in front of our building?" "How could it be that 'Contact,' the 'campus dog,' and other dogs could be legally excluded from the campus?" "What do 'copyright' on my textbook and 'patent' on my fountain pen mean?"[19]

The activity in their city of collecting funds for the Community Chest becomes their interest and concern and ties to the rest of the experiences. "How the University High School carries out the seven objectives of education, as portrayed in the Cardinal Principles" gives opportunity for careful survey of the school and its activities, its standards, faults, virtues; and the broader problems of education are opened up.

A series of group activities, all closely related and unified into a dynamic semester course, characterizes the work in current history. The writer is encouraging the writing up of these activities and keeping them on record. Pupils and teachers are co-operating in making this contribution.[20]

Innumerable purposeful and motivating activities, both within and without the classroom, have not herein been mentioned.

### Changes Effected Through Significant Activities in the Social Studies Program

1. Satisfaction and joy, where there had been dissatisfaction and unhappiness.
2. Success, where there had been failure.
3. Progress, where there had been stagnation.
4. Strength of character, where there had been weakness.
5. Creative self-expression, where there had been inaction or imitation.
6. Motivated social consciousness, where there had been self-centered individualism.
7. Participation in life situations, where there had been but "book learning."
8. An awakening to an interest or vocational bent, where there had been ignorance of any such.
9. An incentive for purposeful leisure hours, where there had been restlessness and wastefulness.

And, when all is said and done, "The final test of learning is the emergence of appropriate conduct."[21]

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[19] Numerous appropriate activities helpful in understanding economics are given by Miss Olive Stewart in the University High School Journal, Vol. 5, pp. 3-17 (March, 1925).

[20] Refer to Miss Crystal Harford, University High School.

[21] The Twenty-sixth Yearbook of the National Society for the Study of Education, Part II, p. 18.

# WHAT HIGH SCHOOL STUDENTS THINK OF THE SCIENCES THEY HAVE STUDIED

CLYDE M. WESCOTT
Head of Science Department, Hollywood High School

FOR THE purpose of collecting data for presentation to a group of science teachers, two questionnaires were given in the Hollywood High School. It is not claimed that the results in other schools would not be materially different but the results do show what the students in one high school think about the different sciences they have studied.

The purpose of the first questionnaire was to determine the relative importance of the different sciences in the minds of the students who had studied them. This questionnaire was answered by all 12B, 12A and P.G. students present at the Hollywood High School on March 2nd, 1926.

While the form of the questionnaire could no doubt be improved on, it seemed to bring out the information desired with few ambiguous answers.

## SCIENCE QUESTIONNAIRE

*(Do Not Sign)*

Boy or girl? .....

Are you planning to go to college? .....

In the following list of science subjects, UNDERLINE those which you have taken, or are now taking: Biology; Chemistry; General Science; Physics; Physiology.

In the above list of sciences *you have taken, or are taking,* make a DOUBLE line under the one which you consider of the greatest value.

In the above list of sciences *you have taken, or are taking,* draw a line *through* the one which you consider of the *least value.*

Among the following reasons, underline your chief reason for taking each of the science subjects you have marked above:

BIOLOGY—1. Belief that the subject was easier than other science subjects; 2. Because you wanted the teacher who taught that subject; 3. Influence of teacher who helped you to make out your program; 4. Belief in the practical value of the subject; 5. Prescribed in your course; 6. Necessary for college entrance; 7. Some other reason.

(For Chemistry, General Science, Physics, and Physiology the same questions were asked as for Biology.)

## RESULTS OF SCIENCE QUESTIONNAIRE

Total number of boys, 286. Number planning to go to college, 232, or 81%.

Total number of girls, 373. Number planning to go to college, 290, or 77%.

Average number of sciences taken per boy before graduation, 2.45.

Average number of sciences taken per girl before graduation, 2.0.

| | *Biology* | | *Chemistry* | | *Gen. Sci.* | | *Physics* | | *Physiology* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Boys* | *Girls* | *Boys* | *Girls* | *Boys* | *Girls* | *Boys* | *Girls* | *Boys* | *Girls* |
| No. having had subject | 112 | 139 | 242 | 250 | 157 | 135 | 125 | 50 | 66 | 177 |
| Per cent | 39.2 | 37.1 | 84.6 | 66.6 | 55.0 | 36.0 | 43.8 | 13.3 | 23.4 | 47.2 |
| No. considering subject most valuable | 11 | 21 | 96 | 98 | 19 | 28 | 82 | 18 | 25 | 93 |
| Per cent | 9.8 | 15.1 | 39.6 | 39.2 | 12.1 | 20.7 | 65.5 | 36.0 | 37.9 | 52.5 |
| No. considering subject least valuable | 67 | 68 | 39 | 49 | 65 | 67 | 4 | 10 | 13 | 14 |
| Per cent | 60.0 | 48.8 | 16.1 | 19.6 | 41.4 | 49.6 | 3.2 | 20.0 | 12.1 | 7.9 |
| 1. Taken because subject was easy | 5 | 5 | 4 | 3 | 4 | 4 | 1 | 1 | 8 | 11 |
| Per cent | 4.5 | 3.6 | 1.7 | 1.2 | 2.5 | 2.9 | 0.8 | 2.0 | 12.1 | 6.2 |
| 2. Wanted certain teacher | 0 | 1 | 2 | 1 | 0 | 2 | 0 | 0 | 1 | 2 |
| Per cent | 0.0 | 0.7 | 0.8 | 0.4 | 0.0 | 1.5 | 0.0 | 0.0 | 1.5 | 1.1 |
| 3. Influence of enroll. teacher | 2 | 3 | 1 | 2 | 7 | 10 | 0 | 1 | 0 | 3 |
| Per cent | 1.8 | 2.1 | 0.4 | 0.8 | 4.5 | 7.4 | 0.0 | 2.0 | 0.0 | 1.7 |
| 4. Taken for practical value | 38 | 43 | 120 | 50 | 66 | 32 | 78 | 22 | 36 | 104 |
| Per cent | 33.9 | 30.9 | 49.6 | 20.0 | 42.0 | 24.6 | 62.3 | 44.0 | 54.6 | 59.0 |
| 5. Prescribed in course | 30 | 42 | 61 | 55 | 53 | 58 | 27 | 2 | 4 | 25 |
| Per cent | 26.8 | 30.1 | 25.2 | 22.0 | 33.7 | 43.0 | 21.6 | 4.0 | 6.0 | 14.3 |
| 6. Necessary for college entrance | 4 | 7 | 75 | 123 | 10 | 3 | 29 | 10 | 3 | 15 |
| Per cent | 3.6 | 5.0 | 31.0 | 49.2 | 6.4 | 2.2 | 23.2 | 20.0 | 4.5 | 8.5 |
| 7. Other reasons | 12 | 14 | 12 | 15 | 9 | 6 | 3 | 4 | 4 | 12 |
| Per cent | 10.7 | 10.1 | 4.9 | 6.0 | 5.7 | 4.4 | 2.4 | 8.0 | 6.0 | 6.8 |

It will be noted that certain reasons frequently assigned for the selection of certain subjects, as ease of subject, or influence of enrolling teacher played almost no part.

A second questionnaire was given to physics students at the end of the subject to determine if possible some of the reasons for the disproportionate enrollment in physics and chemistry which has been noticeable in some schools in recent years.

The questionnaire below was answered by all physics students in two summer graduating classes and one winter class just at the end of the subject. Only those having had both subjects were, of course, competent to judge of relative values or difficulties.

## Questionnaire in Physics

## Results of Physics Questionnaire

### QUESTIONNAIRE IN PHYSICS

Please fill out the following, but DO NOT sign your name.

Roll-call grade .....

1. Have you taken chemistry? .....

2. If you have taken both physics and chemistry, which of the two do you consider the harder? .....

3. If you have taken both physics and chemistry, which of the two do you consider of the wider application and greater value to you in everyday life? .....

4. If you had it to do over, would you take physics? .....

5. If you had it to do over, would you take chemistry? .....

### RESULTS OF PHYSICS QUESTIONNAIRE

| | |
|---|---|
| Total number questioned | 197 |
| Number having had both physics and chemistry | 100 |
| Number having had both who say chemistry is harder | 33 |
| Number having had both who say physics is harder | 67 |
| Number having had both who say chemistry is of wider application | 11 |
| Number having had both who say physics is of wider application | 89 |
| Number who would not take chemistry, if they had it to do over | 14 |
| Number who would not take physics, if they had it to do over | 7 |

### CONCLUSIONS

The above data would seem to indicate that we should not attribute this disproportionate enrollment in the two subjects in any way to a belief on the part of the student that chemistry is the more valuable.

The following reasons are suggested, and probably rank in importance somewhat in the order given:

1. A general weakness in elementary mathematics, including the fundamental operations of arithmetic and the simplest algebra, and an inability to apply these to a simple concrete problem which results in a dread of any subject which has the reputation of involving mathematics.
2. The rather widespread belief that physics is harder than chemistry.
3. Demand for chemists during the war.
4. Activity of American Chemical Society.
5. Activity of Chemical Foundation.
6. Popular books on chemistry such as those by Robert Kennedy Duncan and E. E. Slosson.

The results of a third questionnaire sent to all graduates of the school, while in a different form, were in practical agreement with the results of the two questionnaires above.

It should be remembered that this data is from one high school only and a rather large city high school which sends a large per cent of its graduates to college.

# SCIENCE INTERESTS OF JUNIOR HIGH SCHOOL PUPILS

LEONARD W. WELCH
Director of Agriculture, Long Beach

In order to determine the science interests of junior high school pupils, a mimeographed sheet bearing 160 words, distributed over the field of general science, was put in the hands of 1633 pupils in the Long Beach junior high schools. After one-half hour discussion, the pupils were asked to check ten words in which they were interested and about which they wanted to learn more and to cross out ten words in which they were little or not at all interested. To impress the scientific significance of the words upon the pupils, the teachers of science gave the list to their science classes with instruction to ask questions about the words that were unfamiliar. To insure that most of the words were more or less familiar they were given the classes near the end of the first semester, all having had one-half year of science and many one year.

The results expressed in percentages are as follows:

### A. Preference of Both Boys and Girls

| | | | |
|---|---|---|---|
| Motion Pictures | 33% | Animals | 18% |
| Aeroplanes | 31% | Machinery | 18% |
| Radio | 31% | Flowers | 18% |
| Chemistry | 24% | Northern Lights | 17% |
| Musical Instruments | 23% | Earthquakes | 17% |
| Electricity | 23% | Birds | 16% |
| Planets | 23% | Sea Life | 16% |
| Automobiles | 22% | Volcanoes | 15% |
| Stars | 22% | Piano | 15% |
| Submarines | 21% | Nature | 13% |

### B. Interests of the Sexes

| *Boys* | | *Girls* | |
|---|---|---|---|
| Aeroplanes | 53% | Motion Pictures | 38% |
| Electricity | 40% | Flowers | 34% |
| Radio | 39% | Stars | 32% |
| Automobiles | 39% | Musical Instruments | 28% |
| Submarines | 36% | Planets | 28% |
| Machinery | 35% | Northern Lights | 26% |
| Chemistry | 28% | Earthquakes | 25% |
| Motion Pictures | 27% | Piano | 24% |
| Animals | 21% | Birds | 24% |
| Steam Engines | 21% | Radio | 22% |
| Fishing | 19% | Chemistry | 20% |
| Musical Instruments | 17% | Volcanoes | 19% |
| Planets | 17% | Nature | 19% |
| Motors | 16% | Moon | 17% |
| Telegraph | 16% | Comets | 16% |
| Conservation of Forests | 14% | Animals | 16% |
| Sea Life | 13% | Sun | 16% |
| Radium | 13% | Clothing | 14% |

### C. Comparisons of Boys' and Girls' Interests

1. *Presumably of Greatest Interest to Boys*:

| | Boys % | Boys 0 10 20 30 40 50 | Girls % | Girls 0 10 |
|---|---|---|---|---|
| Aeroplanes | 53 | XXXXXXXXXXXXXXXXXXXXXXXXXXXXX | 10 | XXXXX |
| Electricity | 40 | XXXXXXXXXXXXXXXXXXXX | 6 | XXX |
| Automobiles | 39 | XXXXXXXXXXXXXXXXXXX | 7 | XXXX |
| Submarines | 36 | XXXXXXXXXXXXXXXXXX | 7 | XXXX |
| Machinery | 35 | XXXXXXXXXXXXXXXXX | 2 | X |
| Steam Engines | 21 | XXXXXXXXXX' | 0.2 | |
| Cattle | 12 | XXXXXX | 2 | |
| Gas Engines | 12 | XXXXXX | 0.9 | |

2. *Presumably of Geatest Interest to Girls*:

| | Girls % | Girls 0 10 20 30 40 50 | Boys % | Boys 0 10 |
|---|---|---|---|---|
| Flowers | 34 | XXXXXXXXXXXXXXXXX | 2 | X |
| Birds | 24 | XXXXXXXXXXXX | 8 | XXXX |
| Clothing | 14 | XXXXXXX | 2 | X |
| Food | 10 | XXXXX | 3 | X' |
| Breadmaking | 7 | XXX | 0.7 | |
| Dyeing | 4 | XX | 3 | XX |
| Fireless Cookers | 4 | XX | 1 | |

3. *Mutually Liked by Both Sexes*:

| | Boys % | Girls % |
|---|---|---|
| Radio | 39 | 22 |
| Chemistry | 28 | 20 |
| Motion Pictures | 27 | 38 |
| Animals | 21 | 16 |
| Planets | 17 | 28 |
| Musical Instruments | 17 | 28 |
| Sea Life | 13 | 18 |
| Radium | 13 | 10 |
| Volcanoes | 12 | 19 |
| Sea | 9 | 7 |

### D. Comparison of Humanistic Interests with Pure Science Interests

1. *Humanistic Interests, Boys and Girls*:

| | % | 0 10 20 30 |
|---|---|---|
| Motion Pictures | 33 | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |
| Aeroplanes | 31 | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |
| Radio | 31 | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |
| Musical Instruments | 28 | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |
| Chemistry | 24 | XXXXXXXXXXXXXXXXXXXXXXXX |
| Electricity | 23 | XXXXXXXXXXXXXXXXXXXXXXX |
| Automobiles | 22 | XXXXXXXXXXXXXXXXXXXXX |
| Animals | 18 | XXXXXXXXXXXXXXXXX |
| Flowers | 18 | XXXXXXXXXXXXXXXXX |
| Machinery | 18 | XXXXXXXXXXXXXXXXX |
| Earthquakes | 17 | XXXXXXXXXXXXXXXX |
| Birds | 16 | XXXXXXXXXXXXXXX |

2. *Pure Science Interests, Boys and Girls*:

| | % | 0 10 20 30 |
|---|---|---|
| Buoyancy | 4 | XXXX |
| Sound | 4 | XXXX |
| Electron | 2 | XX |
| Calorie | 1 | X |
| Energy | 1 | X |
| Levers | 1 | X |
| Force | 0.7 | |
| Lens | 0.7 | |
| Density | 0.6 | |
| Steam | 0.6 | |
| Condensation | 0.3 | |
| Evaporation | 0.1 | |

**E. Health Interests, Boys and Girls**

| | | | |
|---|---|---|---|
| Anatomy | 4% | Hygiene | 6% |
| Anti-toxins | 3% | Improvement of living conditions | 4% |
| Bacteria | 3% | Milk supply | 2% |
| Balanced rations | 1% | Teeth | 6% |
| Digestion | 2% | Ventilation | 1% |
| Disease prevention | 5% | Vitamins | 2% |

**F. Civic Interests, Boys and Girls**

| | | | |
|---|---|---|---|
| Conservation of forests | 10% | Sewerage disposal | 1% |
| Disease prevention | 5% | Street trees | 1% |
| Improvement of living conditions | 4% | Water supply (city) | 1% |
| Milk supply (city) | 2% | Weather forecasts | 4% |

**G. Of Least Interest, Boys and Girls**

| | | | |
|---|---|---|---|
| Sewerage disposal | 25% | Fireless cookers | 13% |
| Evolution | 24% | Anatomy | 13% |
| Fertilizer | 20% | Alcohol | 13% |
| Blueing | 16% | Bacteria | 13% |
| Yeast | 15% | Soap | 13% |
| Bread making | 15% | Dyeing | 12% |
| Anti-toxins | 15% | Drugs | 12% |
| Smoke | 14% | Chalk | 11% |
| Molecules | 13% | | |

**H. Of Least Interest, Comparisons of the Sexes**

| *Boys* | % | *Girls* | % |
|---|---|---|---|
| Evolution | 28 | Sewerage disposal | 32 |
| Breadmaking | 22 | Fertilizer | 27 |
| Sewerage disposal | 19 | Plumbing | 21 |
| Blueing | 19 | Evolution | 20 |
| Yeast | 19 | Molecules | 16 |
| Soap | 16 | Anti-toxins | 16 |
| Fireless cookers | 16 | Building material | 15 |
| Smoke | 16 | Anatomy | 15 |
| Dyeing | 16 | Bacteria | 15 |
| Alcohol | 14 | Blueing | 14 |
| Chalk | 14 | Latitude | 13 |
| Fertilizer | 13 | Taxidermy | 13 |
| Anti-toxins | 13 | Yeast | 12 |
| Insects | 12 | Steam engines | 12 |
| Dew | 12 | Smokes | 12 |
| Anatomy | 11 | Drugs | 11 |
| Drugs | 11 | Magnetism | 11 |
| Bacteria | 11 | Machinery | 11 |

### I. Change of Interests

| | *8th Grade* | *9th Grade* | | *8th Grade* | *9th Grade* |
|---|---|---|---|---|---|
| Comets | 14% | 7% | Chemistry | 23% | 26% |
| Eclipse | 10% | 6% | Automobile | 21% | 25% |
| Moon | 12% | 10% | Electricity | 21% | 31% |
| Planets | 23% | 16% | Machinery | 16% | 27% |
| Stars | 23% | 16% | Radio | 30% | 34% |
| Animals | 17% | 14% | Earthquakes | 16% | 20% |
| Birds | 18% | 15% | Mountains | 7% | 10% |
| Flowers | 19% | 18% | Northern Lights | 19% | 20% |

### J. Sciences in the Order of Interests

(Sum of the votes of the five highest frequences in each division A, B, C, etc.)

| *Boys* | | *Girls* | |
|---|---|---|---|
| Physics | 1,670 | Physics | 1,034 |
| Biology | 637 | Astronomy | 982 |
| Chemistry | 531 | Biology | 927 |
| Astronomy | 420 | Physiography | 785 |
| Physiography | 375 | Chemistry | 370 |

## CONCLUSIONS

1. The science interest of junior high school pupils is wide and varied.

2. Junior high school pupils are more interested in science from a humanistic point of view than from a purely scientific.

3. They are not much interested in the so-called fundamentals of science.

4. The interests of the sexes are different.

5. Junior high school pupils are not primarily interested in the health and civic aspects of science as such.

6. Pupils are not interested in subjects that are controversial in nature such as evolution, anti-toxins, alcohol, bacteria; or subjects non-esthetic such as sewerage disposal, fertilizer, plumbing; or commonplace subjects such as blueing, breadmaking, smoke, soap, etc.

7. Apparently there is a change of interests as the pupils pass through junior high school. There is a noticeable change in interest in astronomy, slight in biology; a slight increase in chemistry and physiography and a marked increase in physics.

8. Boys are more positive than girls of their interests while girls are more positive in their dislikes.

9. The positive interests of the sexes are determining factors in the dislikes of the opposite sex, this being more noticeable in boys than in girls.

# STUDIES IN SECONDARY EDUCATION

*Conducted by* Dr. FRANK C. TOUTON
Professor of Education, University of Southern California, Los Angeles

# ACHIEVEMENT IN THE ELIMINATION OF ERRORS IN THE MECHANICS OF WRITTEN EXPRESSION THROUGHOUT THE JUNIOR-SENIOR HIGH SCHOOL*

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and
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PROBLEM. A satisfactory answer to the question, "How can correct habits of expression best be developed in pupils?" is constantly being sought by professionally minded teachers and supervisors of English. That all is not well with the present status of achievement in this field is evidenced from many sources. The business man complains that the training in English expression of his stenographer is inadequate. In educational literature critical articles pointing out what is wrong in the field of English are appearing with increasing frequency. Furthermore, the objective findings of several important error studies have challenged the whole administration of this phase of the English curriculum from its organization in the course of study to its presentation in the classroom.

More specifically, the problem with which we are here concerned is to determine in quantitative terms how well normal samplings of pupils enrolled in the several half grades of the junior-senior high school are able to make correct use of the several tools of English written expression. The results of the research described in the following pages provide an answer to the question, and suggest to makers of the English-language curriculum the need for types of content and amounts of practice which seem not to have been fully considered in the making of the curriculum now in use.

*Purpose of This Report.* The purpose of this report is to reveal the need for the general use in the classroom of the secondary school of the recently devised scientific procedures intended to develop correct habits of language usage, and to show the necessity of a more effective organization

* From a Master's Thesis written by W. H. Potter under the direction of Professor Frank C. Touton.

of the curriculum in this phase of English. Greater effectiveness in this field is especially desirable since a step forward here, in releasing energies that now are more or less futilely expended on form, to the appreciation and understanding of the content of great literature, is fraught with almost infinite possibilities for the life of the spirit.

The conclusions and remedial suggestions, arising from the data of this study of which this report is a part, are based upon a carefully controlled technique. Since, however, findings based upon the revelations of an unreliable instrument are of no value, it will, consequently, be necessary to show that the materials, procedures, and data used were of such nature that weight can be given to the generalizations based upon them. Changes in educational machinery and technique can be justified only when they are supported by findings the validity of which cannot be questioned.

*Findings of the Study for Which Data Are Presented.* The secondary school has as one of its aims the equipment of the pupil with the tools of scholarship which he will use later in the university, or in life, in his various researches in the quest of wisdom and knowledge. How well this task has been accomplished in one field with one cross section of pupils is shown at this point for the benefit of those readers who are not interested in the supporting evidence and specific findings which have been relegated to the rear. The data made available by the administration and standardization of the test used in the study warrant the following general conclusions:

1. In general, but little progress in the elimination of language errors is made throughout the secondary school.
2. Few language errors are largely eliminated by the secondary school.
3. Most language errors show a low degree of elimination by the secondary school.
4. The greatest progress in the elimination of language errors is attained in grade 9 H.
5. Gains from grade to grade are not uniform.
6. Gains in the elimination of any group of language errors for which grade objectives are stated are not uniform within the designated grade.
7. Mastery of any form of expression is not shown in any grade, although the objective calling for its mastery is stated.
8. The greatest number of acceptable corrections is shown in the grammar group of errors.
9. The highest level of achievement throughout the secondary school is maintained by acceptable corrections of the grammar group of errors.
10. The smallest number of acceptable corrections is shown by the paragraphing group of errors.
11. The findings of the present study in general do not agree with those of other investigators.
12. The statement of grade objectives increases achievement in the grade for which they are stated.
13. The test itself is a satisfactory measuring instrument.

If the above findings are valid, (and a large part of the remainder of this paper will be devoted to showing that there are very good grounds for accepting them), obviously, curriculum and course of study makers should take account of the results here shown.

*Description of the Test.* Professor E. L. Thorndike, upon being asked what should be done to improve the written examination in English, is reported to have said, "find a hundred substitutes for it." The study, the findings of which are reported here, was an attempt to meet the above requirement in one particular by developing and presenting a standardized achievement test to be known as A Junior-Senior High School Language Error Test, and designed to measure accomplishment in the mechanics of written expression, and to indicate for this phase of English the needs of the individual pupil, the class, the school, or the school system.

With the idea of incorporating in the test only those errors that secondary-school pupils actually make, previous error studies[1] were examined and some sixty-four types of the most common errors that had been found to be both widely prevalent and persistent in the work of secondary-school pupils were selected as suitable and necessary for the test. Having arranged them as nearly as possible in homogeneous groups, we found them distributed as follows: sentence structure, 16; grammar, 16; diction, 3; organization, 1; punctuation, 19; and miscellaneous, 9.

LANGUAGE ERRORS CONSIDERED IN THE STUDY

| *Designations Used Later in Table 6, Page 272* | *Type* |
|---|---|
| I. | Errors in sentence structure. (See line D of graph, page 274.) |
| 1a. | Confusion of dependent and independent clauses—Too little for a sentence. |
| 1b. | Too much for a sentence. |
| 2. | Omission of subject. |
| 3. | Omission of predicate. |
| 4. | Omission of necessary words besides subject and predicate. |
| 5. | Faulty reference. |
| 6a. | Shift in point of view—tense. |
| 6b. | Shift in point of view—person and number. |
| 7. | Dangling participle. |
| 8. | Needless or offensive repetition. |
| 9. | Wrong preposition. |
| 10. | Wrong conjunctive. |
| 11. | Sentence begun with "And." |
| 12. | Wrong handling of parallel structures. |
| 13. | Misplaced word. |
| 14. | Double negative. |
| II. | Errors in Grammar. (See line A of graph, page 274.) |
| 15. | Subject not in nominative case. |
| 16. | Object of preposition not in objective case. |
| 17. | Predicate nominative not in nominative case. |
| 18. | Wrong form of noun. |
| 19. | First personal pronoun standing first in a series. |
| 20. | Wrong verb. |
| 21. | Disagreement of noun and pronoun. |
| 22. | Disagreement of verb with its subject in person and number. |
| 23. | Confusion of past and present tenses. |
| 24. | Confusion of past tense and past participle. |
| 25. | Wrong tense form. |
| 26. | Incorrect use of mood. |
| 27. | Incorrect comparison of adjectives. |
| 28. | Confusion of adjectives and adverbs. |
| 29. | Confusion of prepositions and conjunctions. |
| 30. | Wrong part of speech on account of similarity of sound. |

[1] Those of H. E. Potter, W. W. Charters, and others.

III. Errors in Diction. (See line F of graph, page 274.)
- 31. Poor choice of words.
- 32. Wordiness.
- 33. Confusion of words similar in sound.

IV. Errors in Organization. (See line G of graph, page 274.)
- 34. Faulty paragraphing.

V. Errors in Punctuation. (See line E of graph, page 274.)
- 35. Failure to place period at end of sentence.
- 36. Failure to place question mark at end of sentence.
- 37. Failure to use quotation marks.
- 38. Failure to use apostrophe.
- 39a. Failure to use comma when needed—To set off a non-restrictive clause.
- 39b. After a subordinate clause standing first in a sentence.
- 39c. Before "but."
- 39d. To set off a parenthetical element.
- 39e. To separate a series.
- 39f. To introduce a quotation.
- 39g. To compel a pause for the sake of clearness.
- 40. Improper use of comma—run-on sentence.
- 41a. Semi-colon—Improper use of semi-colon.
- 41b. Failure to use semi-colon.
- 42. Failure to use colon.
- 43. Failure to use exclamation point.
- 44. Improper use of hyphen.
- 45a. Failure to use dash—Before a summarizing statement at end of sentence.
- 45b. To set off informal matter foreign to the sentence.

VI. Miscellaneous Errors. (See line B of graph, page 274.)
- 46a. Misspelled words—"All right."
- 46b. "Occurred."
- 46c. "Swimming."
- 47. Failure to capitalize proper nouns or adjectives.
- 48. Capitalization of common nouns or adjectives.
- 49. Improper use of figures.
- 50. Syntactical redundance.
- 51. Split infinitive.
- 52. Improper use of abbreviations.

The test was then constructed and subjected to the standard test criteria. With due regard to the requirements of brevity, the sixty-four errors were woven into the context of a 500-word theme.

Form A of the test, together with its key to correction, follows on the next page. Below is found a supplementary list of alternative corrections for Form A:

1. For line 4. *The friend I was with* (or) *The friend that I was with*
2. For line 4. *said she used* (insertion of *said*)
3. For line 4. *frequently* (or) *a great deal*
4. For line 8. *Neither of us*
5. For line 11. *flew, but we*
6. For line 16. *tired, and although*
7. For line 21. *knows no*
8. For line 26. Omit *"and"*—retain semi-colon (or) begin new sentence.
9. For lines 27, 28. ( ) Parenthesis marks instead of dashes.

(FORM A) A NARROW ESCAPE

One ~~Summer~~ summer day while swimming at the oceanside, an incident occurred which I ~~will~~ shall long remember. The lunch which was altogether ~~to~~ too scant had been finished, and ~~me and my friend~~ my friend and I had ~~went~~ gone into the ocean for a swim. Since the ~~friend~~ ~~party~~ whom ~~she~~ I was with ~~use~~ used to practice ~~a lot~~ considerably, I thought she could swim as ~~well~~ good as ~~me~~ I, but I soon learned that I was the ~~best~~ better of the two of us. The tide was in and looked ~~like~~ as if it was at its highest. Although we had ~~saw~~ seen the dangers of the sea presented in a "movie", ~~we~~ we struck out boldly for deep water. Neither ~~she or~~ nor I suspected what was in store for us. We spent the moments joyously, ~~swiming~~ swimming now this way and now that, sporting in the water like porpoises, and ~~we laid in the troughs~~ lying in the troughs of the waves. ~~One~~ At one place the water was quite warm. The moments ~~flew~~ flew, however, we were not conscious of time. We ~~only~~ were aware only of the joy of exercise ~~and activity~~ (omit). We conversed as follows, Lets swim to Catalina, I shouted. Wouldn't you like to swim to China was her response. How warm the water is I exclaimed. And buoyant she added. It ~~occured~~ occurred to no one on shore that things might not be ~~alright~~ all right with her and ~~I~~ me. It was not long however until we began to get tired. Although we should ~~of~~ have known better we foolishly ~~choose~~ chose to stay in the water to the point of fatigue. The shore line was now far away, but we struck out ~~unconcernedly~~ unconcernedly for it, ~~nevertheless~~ never-the-less, hoping in a few minutes to ~~comfortably~~ sitting comfortably be ~~setting~~ on the beach. We swam for some time but we made no headway. ~~And greater~~ Greater exertions brought no results, and then we realized we were fighting the swimmers worst foe, a foe that ~~don't~~ doesn't know ~~no~~ any mercy once you are in ~~it's~~ its clutches, a tide rip. The moments passed on ~~there~~ their leaden feet. Omit (or) insert subj. and pred. True in my case, at least. On the shore the life ~~&~~ and color had never seemed so inviting. The ~~fight~~ struggle, I felt might be useless, but since I was always a fighter, I would not give up ~~the fight~~ (omit). "If only I ~~see~~ were a better swimmer," I thought. Thoughts of death by drowning assailed me, and I feared my time had ~~come~~ come. My feet sank, but instead of going under I found myself standing, would you believe it? on the bottom. This ~~was~~ outcome of my struggle (or) outcome was miraculous. The bells that had ~~rung~~ rang in my head for some time ceased, ~~immediately~~ Immediately (or 9 here) I looked back to see how my friend was faring. She was only about ~~10~~ ten feet behind me, but on her face I ~~seen~~ saw a desperate look. If anyone has a ~~women~~ woman along with ~~them~~ him, ~~they are~~ he is more or less responsible for her. Exhausted as I was I went back since it is in a crisis ~~where~~ that a man shows his mettle. In spite of the fact ~~that~~ I helped her for only a few feet, she has ever since insisted that it was ~~me~~ I who saved her life on that unforgetable day.

The process of incorporating these sixty-four errors in a theme of approximately the same length was later repeated with a different context in order to have an alternative form of the test to be known as Form B, which appears on the next page. Here follows a supplementary list of alternative corrections for Form B:

1. For line 2. Comma before *and*
2. For lines 7, 8. ( ) Parenthesis marks instead of dashes.
3. For line 9. *of whom I had read so much, occurred to me.*
4. For line 11. *he thinks he can* (or) *one thinks he can*
5. For line 13. *makes no*
6. For line 18. *like a lady,*
7. For line 21. *was* (or) *occurred* (or) *was enacted*
8. For line 32. *further. So*

The subjection of the test to such test criteria as validity, accuracy, discrimination, objectivity, reliability, and economy was carried out as the test was constructed and administered. Norms were established, and the reliability of the test demonstrated as soon as the data for such purposes were available.

*The Subjection of the Test to Test Criteria.* Test criteria as laid down by McCall,[2] Ruch,[3] Monroe,[4] and Franzen and Knight,[5] have been met as far as the nature of the test permitted.

Validity has been secured in a number of ways. The errors included in the test were not selected by means of the subjective judgment of the writer. Only those errors which previous error studies have shown to be common in the written compositions of junior and senior high school pupils were allowed to appear in the test. The presence of too infrequent errors and the absence of frequent errors were determined in part by competent persons,[6] experts in the teaching of English.

The social utility of correct usage as a criterion of validity is a commonplace in education. Errors in English of the type included in the test are generally conceded to be the stamp of illiteracy. The text books in the field of junior and senior high school English reveal multitudes of error exercises containing errors of the type embodied in the test. Objectives in English as set forth by the new course of study[7] for the Los Angeles City secondary schools have made it possible in many instances to see to it that only indubitable errors went into the test. In the above ways has the "worth whileness" of the test been guaranteed.

In test building it is necessary to know how accurately pupil achievement is measured. For that reason, at first it was thought advisable to weight the scores according to difficulty since, for example, it takes a greater knowledge of English to correct a dangling participle than to cor-

[2] Wm. A. McCall, *How to Experiment in Education*, Ch. V.

[3] G. M. Ruch, *The Improvement of the Written Examination*, Ch. II.

[4] W. S. Monroe, *An Introduction to the Theory of Educational Measurements*, Ch. IX.

[5] Raymond Franzen and F. B. Knight, "Criteria to Employ in the Choice of Tests," *Jr. of Ed. Psych.*, Oct., 1921, Vol. 12, No. 7.

[6] The writers are grateful to two colleagues of the Lincoln High School Faculty, Miss Elizabeth Cutting and Mr. Alfred K. Jenkins, who generously read the two forms of the test and gave valuable criticism.

[7] Course of Study Monographs, English, 1922, 1923, Dep't of Ed. Research, Los Angeles City Schools.

(FORM B)

## A HARD FALL

When I was about ~~10~~ twelve years old, ~~My~~ my most prized ~~possession~~ possession was a gray mare named Dolly. She was small ~~&~~ and fleet of foot, ~~only~~ Only the fiery eye and ~~roman~~ Roman nose showed the broncho in her. Although she ~~sure~~ certainly was high-strung, ~~me~~ she and ~~her~~ I spent many happy hours together. I thought her superior to any other horse of her class, a paragon. ~~One~~ In one place about a mile from my home the grass was especially green and there I ~~use~~ used to stake her out each night. ~~And one~~ One morning, when the larks were singing gayly I ~~sets~~ set out as usual to get her. It is in the country, how lucky I was! ~~where~~ that one can really enjoy life. ~~Soon~~ I soon reached her, sprang on, and set out at a gallop for home. Thoughts of famous horsemen ~~who~~ whom I had read so much about ~~occured~~ occurred to me. I felt certain that I could ride as ~~good~~ well as they. My motto was this, One ~~only~~ rides as well as ~~they think they~~ one thinks one can. I considered entering the riding contests that ~~they~~ were held yearly throughout the state, since it ~~don't~~ doesn't make ~~no~~ any difference how old ~~a party~~ one is so long as he can ride. I was thinking, "Oh, if I ~~see~~ were only a cowboy, how happy I ~~would~~ should be!"

Just then I ~~seen~~ saw a ~~playmate~~ playmate, and I thought I would show him what a daring rider I was. He thought that he was the ~~best~~ better rider of ~~us~~ us two; consequently I determined to ~~learn~~ teach him a lesson. Although I should ~~of~~ have known better, I flung one leg over Dolly's neck and rode ~~setting~~ sitting sidewise ~~like~~ as if I ~~was~~ were a lady, shouting at the same time to attract his attention. ~~This~~ My vanity (or) omit sentence, alas, was my undoing. Scared by some object which I could not see, my mount ~~she~~ (omit) swayed suddenly to one side, and I swayed as suddenly ~~for~~ to the other side. I knew no more. The next scene ~~took place~~ in my bedroom late in the afternoon of the same day. As I slowly became (or omit) conscious ~~a woman's~~ I saw women's face ~~was seen~~ (omit) which I soon recognized as that of my mother. I ~~laid~~ lay in bed wondering about a ~~lot~~ number of things: how I had got ~~their~~ there, ~~the~~ what day of the week, ~~it was~~ whether or not it was ~~to~~ too early for school, and ~~whos~~ who it was that had hit me. My questions proved to me that I had ~~came~~ come home in a very ~~rattled and~~ (omit) dazed condition. I had held a conversation, so I was told, with my playmate which ran somewhat like this: "Where is she?" I asked. "Who?" asked my playmate. "Why, the horse I was riding," I replied. "I haven't seen any horse," said my playmate. At the time I was utterly perplexed, little realizing that although he was only a little ~~way~~ way off, he hadn't even ~~saw~~ seen my "show". The conversation had quickly become too difficult for my dazed mind to pursue further, so I had ~~went~~ gone stumbling on in ~~a dazed~~ an uncertain way. Although I had rapidly become more and more ~~dazed~~ confused, I managed ~~never the less~~ nevertheless to ~~blindly~~ blindly (omit) stagger home, where I was put to bed. ~~Quite a while~~ Several days (or) a long time elapsed before I was again ~~alright~~ all right.

rect a wrong verb. It might be argued, however, that failure to correct a wrong verb ought to be penalized by a reduction in score value since it is more "heinous" than failure to correct a dangling participle. On the other hand, if the importance of a construction is determined by its social value, as it should be, the ability to use the correct verb may be considered of as great value as the avoidance of a dangling participle.

Charters[8] has shown that the correlation between tests possessing weighted scores and those possessing unweighted scores is very high. Upon finding that the difference in the test results was not sufficient to justify the labor involved in computing the weighted scores, he dropped the weights in his Language and Grammar Tests. For the above reasons it was thought wise not to use weighted scores in the test presented in this study but to calculate the scores just as though the various units of the test were equal in difficulty.

To possess any value as a measuring instrument a test must discriminate among the work of pupils in the same class as well as among the work of pupils in the various school grades. This differentiation is made by the test presented in this study. Not only is there discrimination between the successive grade levels, but pupils within a grade group are normally distributed as to achievement, no pupil receiving 0 per cent and none 100 per cent. The test also shows not only that a pupil is weak but in which elements he is weak, so that remedial instruction can be readily encompassed.

Considerable care was taken to make the test objective. A test that does not yield the same diagnosis in the hands of one individual that it does in the hands of another has no value. In order to meet the requirements of this criterion, uniform directions were laid down for the examiners and for the pupils. The directons to examiners were both detailed and specific, enabling each examiner to deal with every significant situation. In giving the test the examiner, after having passed the papers to the class, reads the instructions to the pupils aloud, with the pupils reading the same material silently. In this way it was insured that all the pupils understood what they were to do before they were told to begin.

The personal element was further reduced by the use of fine scoring units. In most cases there is but one acceptable correction for each error, and rarely more than two. In correcting the papers scorers used stencils on which were written nearly all of the possible acceptable corrections. Such acceptable corrections as were not placed on the stencils were listed in a reserve list for occasional reference as the need arose. In no case was any scoring done without the personal supervision of one of the writers. This procedure secured uniform scoring.

Of all the criteria that a test must satisfy, none is more important than reliability; that is, it must yield the same results tomorrow that it does

[8] W. S. Monroe, *Theory of Educational Measurements*, p. 118.

today. This requirement was met by a certain procedure. In order to make the duplicate forms of the test really equivalent especial care was taken to insert the same number and type of errors in Form B that appeared in Form A. The directions to examiners and to pupils were identically the same for Form B as for Form A. Examiners were instructed to administer Form B not more than one day later than Form A to the same pupils who had already had the latter. This procedure was followed by nearly every examiner as the dates on the Form B papers showed. All test papers on which evidence of failure to follow instructions was apparent were laid aside as unsuitable material for use in the study.

The method of self-correlation was used as the chief means of proving the reliability of the test. Justification for this procedure is found in the following statement of McCall[9]: "The method of self-correlation is to compute the coefficient of correlation between the two series of scores secured from two administrations of the same or duplicate tests to the same pupils. If this correlation is zero, the test has no reliability whatsoever and the test is worthless no matter how many other good qualities it may possess. The nearer the coefficient approaches unity the nearer the test approaches perfect reliability." The coefficients of correlation between the two forms of the test—or reliability coefficients as they are sometimes called—for the twelve half grades of the junior and senior high school are recorded in Table 1 on page 265 of the text. McCall[10] gives the reliability coefficients for five standard educational tests as follows: .55, .7, .75, .8, and .9. It would seem, then, from a comparison of these figures with the coefficients of correlation in Table 1 that the reliability of the test is sufficiently high to justify its use as an educational instrument.

After the test papers had been scored and rechecked to see that all scores were accurate, data were available for setting up norms. The grade norms, which are standards of achievement and not for achievement, were based upon the *means* of the scores for each half grade, a score consisting of the percentage of acceptable corrections made by one pupil on one test. From 203 to 357 Form A test papers were used in making the grade norms for each half grade. Thorndike and McCall use as few as 200 pupils in one half grade in making grade norms for the Thorndike-McCall Reading Scale[11]. Especial care was taken in the administration of the test to secure a normal sampling for each half grade and an equal sampling from the schools in which the test was given. After the grade norms were established the papers were redistributed according to the age of the pupils, 10 year olds, for example, comprising all those pupils between 9 years and 6 months and 10 years and 5 months, etc., and age norms were established in the same way.

The grade and age norms for Form B are the same as for Form A. It is possible to make this statement for two reasons: 1) The errors ap-

[9] Wm. A. McCall, *How to Measure in Education*, p. 510.
[10] Wm. A. McCall, *How to Measure in Education*, p. 310.
[11] Cf. p. 4 of the directions for using Thorndike-McCall Reading Scale.

pearing in each form of the test are identical; 2) The coefficients of correlation between the two forms of the test for each of the twelve half grades are high.

Since the two forms of the test are practically equivalent, the writers suggest that Form A be given at the beginning of the semester and Form B at the end. This procedure will give a clear notion of the progress made. The resulting individual and group comparisons will make it possible for the teacher or supervisor to make adjustments which should produce greater educational efficiency.

As the test was constructed the principle of economy was constantly kept in mind. The time of the examiner is conserved by the use of stencils in scoring papers, a procedure which makes it possible for assistants to do the correcting. The pupil's time and energy are economized not only because of the test's appeal to his interest, but also because of the slight amount of labor involved in taking the test.

*The administration of the test.* The administration of the test was governed by a certain procedure. It was decided that the work of some 6000 secondary school pupils would be sufficient for the purposes of the study. The pupil's task was to detect and correct the errors. In order to secure uniformity of procedure, directions were drawn up for both teachers and pupils. The test was then given at one time in the middle of the 1925 school year to non-identical but what were believed to be normal samplings of the pupils in each half-grade of six widely separated Los Angeles secondary schools, care being taken by means of the latter provision to secure a normal social sampling of the school population of the city. A normal sampling for each half-grade was determined by satisfying the requirements of the Gaussian curve by selecting 25 per cent of the pupils from low ability groups, 50 per cent from medium ability groups, and 25 per cent from high ability groups. In those grades where homogeneous grouping existed, normal samplings were made, based upon the grouping as determined by the particular school being examined. The papers were collected, sorted according to the requirements of a normal sampling of the pupils in each half-grade, and the work of correction was started. Care was taken to secure objectivity in the correction of papers by the use of stencils and keys to correction. All those who assisted worked under the personal supervision of one of the writers. Upon the completion of the work some interesting results became apparent.

*The Standardization of the Test.* The data provided by the administration of the test made it possible to standardize it. Satisfactory norms for age and grade were established, and the self-correlation of the test worked out for each half-grade. The latter procedure showed the reliability of the test to be high. The distribution of the scores by half grades together with the various measures of central tendency and variability follows:

TABLE 1, SHOWING THE DISTRIBUTION OF SCORES FOR THE SEVERAL HALF-GRADES BASED UPON THE ACCOMPLISHMENT OF 3140 SECONDARY PUPILS IN NORMALLY DISTRIBUTED GROUPS. HIGHEST POSSIBLE SCORE: 90.

| Grades | 7L | | 7H | | 8L | | 8H | | 9L | | 9H | | 10L | | 10H | | 11L | | 11H | | 12L | | 12H | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequencies on Forms | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| 0-4.9 | 17 | 11 | 14 | 2 | 3 | | 3 | 1 | 1 | | 1 | 2 | 1 | | | | | | | | | | | |
| 5-9.9 | 44 | 14 | 32 | 5 | 26 | 5 | 20 | 2 | 18 | 3 | 2 | 1 | 11 | 1 | | | 2 | | 1 | | | | 1 | 1 |
| 10-14.9 | 61 | 28 | 45 | 6 | 53 | 26 | 49 | 8 | 40 | 8 | 15 | 4 | 11 | 1 | 4 | | 4 | 2 | 2 | 1 | 1 | | 1 | |
| 15-19.9 | 44 | 37 | 45 | 7 | 56 | 19 | 57 | 14 | 48 | 13 | 23 | 9 | 29 | 2 | 8 | 3 | 4 | 2 | 7 | 3 | 6 | 1 | 1 | |
| 20-24.9 | 22 | 27 | 51 | 12 | 51 | 31 | 65 | 20 | 72 | 15 | 37 | 16 | 43 | 15 | 25 | 4 | 11 | 7 | 5 | 5 | 11 | 6 | 6 | |
| 25-29.9 | 15 | 15 | 28 | 14 | 35 | 31 | 65 | 22 | 49 | 22 | 65 | 18 | 58 | 24 | 18 | 11 | 25 | 11 | 19 | 8 | 24 | 1 | 9 | 4 |
| 30-34.9 | 5 | 12 | 18 | 13 | 15 | 14 | 22 | 10 | 45 | 13 | 48 | 14 | 39 | 13 | 36 | 18 | 42 | 15 | 29 | 13 | 35 | 17 | 29 | 8 |
| 35-39.9 | 2 | 5 | 13 | 14 | 9 | 13 | 24 | 8 | 36 | 14 | 39 | 17 | 41 | 24 | 27 | 16 | 41 | 24 | 38 | 14 | 42 | 21 | 23 | 14 |
| 40-44.9 | 1 | 3 | 2 | 8 | 6 | 8 | 13 | 7 | 32 | 9 | 34 | 11 | 45 | 23 | 35 | 18 | 34 | 14 | 40 | 14 | 61 | 35 | 34 | 23 |
| 45-49.9 | 1 | | 5 | 2 | | 2 | 5 | 2 | 11 | 3 | 22 | 5 | 23 | 18 | 20 | 18 | 34 | 13 | 24 | 26 | 41 | 25 | 30 | 18 |
| 50-54.9 | | | | 2 | | 1 | 2 | | 2 | | 16 | 2 | 13 | 8 | 18 | 7 | 17 | 9 | 20 | 9 | 33 | 17 | 35 | 17 |
| 55-59.9 | | | | | | | 1 | 1 | 2 | | 3 | 1 | 2 | | 6 | 3 | 7 | 3 | 22 | 6 | 18 | 4 | 19 | 13 |
| 60-64.9 | | | | | | | | | 1 | | 1 | | | 1 | 3 | 2 | 2 | | | 1 | 7 | 3 | 12 | 2 |
| 65-69.9 | | | | | | | | | | | | | | | | | | | 2 | | 1 | | 3 | |
| 70-74.9 | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| 75-79.9 | | | | | | | | | | | | | | | | | | | | | | | | |
| 80-84.9 | | | | | | | | | | | | | | | | | | | | | | | | |
| 85-90 | | | | | | | | | | | | | | | | | | | | | | | | |
| N | 212 | 152 | 253 | 85 | 254 | 150 | 326 | 95 | 357 | 100 | 306 | 100 | 316 | 130 | 200 | 100 | 223 | 100 | 209 | 100 | 281 | 130 | 205 | 100 |
| Modal Interval | 10-14.9 | 15-19.9 | 20-24.9 | 25-29.9 | 15-19.9 | 20-24.9 | 20-24.9 | 25-29.9 | 20-24.9 | 25-29.9 | 25-29.9 | 30-34.9 | 30-34.9 | 30-34.9 | 35-39.9 | 35-39.9 | 35-39.9 | 40-44.9 | 40-44.9 | 45-49.9 | 45-49.9 | 45-49.9 | 45-49.9 | 45-49.9 | 45-49.9 |
| Total Range | 0-50 | 0-45 | 0-50 | 0-55 | 0-45 | 0-55 | 0-60 | 0-60 | 0-65 | 0-60 | 0-65 | 5-65 | 5-65 | 10-70 | 15-70 | 20-70 | 10-70 | 15-65 | 10-75 | 15-70 | 15-80 | 20-70 | 10-75 | 10-70 |
| Median | 13.7 | 18.1 | 19.0 | 28.8 | 19.0 | 24.0 | 22.8 | 25.6 | 25.0 | 27.5 | 31.1 | 35.0 | 35.7 | 41.9 | 41.7 | 44.5 | 42.9 | 42.7 | 45.5 | 47.2 | 46.8 | 47.7 | 49.7 | 50.0 |
| P10 | 5.5- | 6.5- | 6.8- | 11.3- | 9.3- | 11.9- | 11.0- | 14.1- | 12.1- | 14.4- | 17.7- | 21.7- | 21.5- | 28.0- | 26.6- | 31.4 | 30.3- | 29.3 | 31.6 | 30.6 | 32.1 | 36.5 | 35.4 | 38.1 |
| P90 | 25.9 | 32.0 | 33.5 | 42.2 | 31.5 | 38.5 | 37.6 | 40.4 | 41.9 | 41.1 | 47.5 | 49.1 | 51.4 | 53.9 | 56.9 | 56.4 | 56.1 | 57.7 | 60.7 | 58.3 | 59.8 | 58.2 | 63.6 | 62.1 |
| P25 | 9.1- | 12.3- | 11.9- | 20.5- | 13.3- | 16.7- | 15.8- | 19.6- | 18.2- | 20.3- | 24.8- | 27.8- | 28.1 | 32.8- | 33.6 | 36.9 | 36.2 | 36.0 | 38.1 | 38.1 | 38.5 | 41.6 | 40.8 | 44.3 |
| P75 | 19.2 | 24.5 | 25.4 | 36.7 | 25.2 | 30.2 | 28.9 | 32.1 | 34.4 | 35.4 | 39.9 | 43.2 | 45.4 | 46.8 | 49.6 | 51.4 | 50.6 | 60.0 | 53.5 | 53.3 | 53.8 | 53.3 | 57.6 | 57.1 |
| Mean | 14.8 | 18.3 | 19.5 | 27.5 | 19.8 | 24.0 | 23.2 | 25.7 | 26.4 | 29.5 | 31.9 | 34.8 | 36.3 | 40.6 | 41.2 | 43.6 | 42.9 | 42.1 | 45.4 | 45.0 | 46.4 | 46.8 | 49.2 | 49.5 |
| S D | 8.04 | 9.35 | 10.04 | 11.0 | 11.04 | 9.65 | 9.96 | 9.85 | 11.05 | 10.36 | 11.0 | 10.6 | 11.41 | 9.95 | 11.04 | 9.8 | 10.35 | 9.95 | 11.03 | 10.55 | 10.56 | 8.7 | 11.15 | 9.2 |
| r | .797 | | .805 | | .821 | | .685 | | .844 | | .799 | | .818 | | .820 | | .790 | | .851 | | .731 | | .739 | |
| P E | .019 | | .025 | | .017 | | .036 | | .018 | | .024 | | .019 | | .021 | | .024 | | .016 | | .026 | | .030 | |

This table should be read as follows: On the score interval 0-4.9 17 grade 7L pupils are found who took the A Form of the test and 11 grade 7L pupils who took the B form of it. Each of the other entries is to be interpreted in the same way.

*Discrimination.* An examination of the data reveals the fact that the test does discriminate. The distributions of scores are normal in all grades except grade 7 in which a slight skewness is evident owing, no doubt, to the fact that grade 7 pupils have but little ability to detect and correct errors. The test papers showed that no pupil received a score of 0, and that no one corrected all of the 90 errors. The means of the several grades show a steady and distinct upward trend from the lowest to the highest grades. Moreover, even though the average accomplishment increases from grade to grade, the variability in accomplishment remains approximately constant.

*Grade Norms.* The standards set forth for both age and grade are not standards for achievement but standards of actual achievement. A grade norm consists of the mean of all the scores for a grade, the scores for a grade being based upon a normal sampling of the pupils of that grade. Table 2 shows the grade norms of the several grades.

TABLE 2, SHOWING GRADE NORMS BASED UPON THE MEANS OF THE ACCEPTABLE CORRECTIONS FOR EACH HALF-GRADE DERIVED FROM THE FORM A SCORES OF 3,140 SECONDARY SCHOOL PUPILS NORMALLY DISTRIBUTED BY HALF-GRADES.

| *At End of* | *Possible Corrections* | *No. Pupils* | *Mean Achievement in Acceptable Corrections (Norm)* | *Mean Achievement in Percentages of Acceptable Corrections* |
|---|---|---|---|---|
| 7 L | 90 | 212 | 14.8 | 16.4 |
| 7 H | 90 | 253 | 19.5 | 21.7 |
| 8 L | 90 | 254 | 19.8 | 22.0 |
| 8 H | 90 | 326 | 23.2 | 25.8 |
| 9 L | 90 | 357 | 26.4 | 29.3 |
| 9 H | 90 | 306 | 31.9 | 35.4 |
| 10 L | 90 | 316 | 36.3 | 40.4 |
| 10 H | 90 | 200 | 41.2 | 45.8 |
| 11 L | 90 | 223 | 42.9 | 47.7 |
| 11 H | 90 | 209 | 45.4 | 50.5 |
| 12 L | 90 | 281 | 46.4 | 51.5 |
| 12 H | 90 | 203 | 49.2 | 54.7 |

*This table should be read as follows*: The norm for grade 7 L, which is based upon the mean achievement in acceptable corrections derived from the Form A papers (each of which contains 90 possible corrections) of a normally distributed group of 212 pupils, is 14.8; and the mean achievement in percentage of acceptable corrections is 16.4. Each of the other entries is to be interpreted in the same way.

The grade norms are set for the end of the semester. This procedure was possible since the test was given shortly after the end of the fall semester during the second and third weeks of the 1925 spring semester before additional instruction had taken effect. Because of the customary grade changes made at this time, it was thought that grade norms set for the end of the semester would be valuable in determining whether or not pupils should receive promotion. Moreover, if the test is used diagnostically with Form A given at the beginning of the semester, Form B given at the end will reveal definitely the progress made by the pupil, class, or school.

In Table 1 the reader has, no doubt, observed that the mean scores for Form B of the test for grades 7-L to 10-H inclusive are somewhat higher than those of Form A. This situation needs explanation. If an alternative form of a test is given immediately after the first form, a gain in score generally appears which is called the practice effect. "It appears," states Monroe,[12] "that in many cases second-trial scores will be about 10 per cent higher than first trial scores." On the other hand there is no practice effect evident in grades 11 and 12. This situation is probably due to the greater reading ability of mature high school pupils coupled with a greater ability to muster what they really know on the first form of the test. If, however, Form A is given at the beginning of a semester and Form B at the end, sufficient time will have elapsed so that the practice effect on the alternative form of the test, evident in the lower grades, may be disregarded. Again, if the alternative form of the test is given within a period of from three to five weeks to pupils below grade 11, it is the writers' judgment that a practice effect of approximately 10 per cent should be subtracted from the scores on the alternative form before comparisons are made. With the above precautions safeguarded, comparisons of the results of the duplicate forms with each other and with the norms are possible.

In the tabulation of the raw scores the regular procedure was followed. The scores were first arranged in frequency distributions for each half-grade and the total recorded. The modal interval, which is that interval in a grouped distribution containing the greatest number of scores, was next ascertained. The total range as reported in the table is the distance between the foot of the lowest and the top of the highest intervals in each distribution. For some half-grades the foot of the lowest interval apparently is 0 and the top of the highest interval in which a score was made 80 according to the presentation in Table 1. As a matter of fact, however, an inspection of the actual test scores for each half-grade revealed that the lowest score in any half-grade was 1 and the highest 75. The median and the other percentiles were found by the use of the following formula:

$$\text{Any percentile score} = \text{Foot of step} + \text{L} \times \frac{\text{No. needed}}{\text{No. there}}$$

in which L equals the number of units in each score interval of a grouped distribution.

The customary method of finding the mean of a grouped distribution was used. The middle value of each score interval was found and multiplied by the frequency on that interval, after which the sum of the scores was divided by the number of the scores.

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[12] W. S. Monroe, *The Theory of Educational Measurements*, Houghton Mifflin Co., 1923, p. 168.

The standard deviation, which as a general rule should be stated when the mean is given—just as 10-90, and 25-75 percentiles are the appropriate measures of spread to accompany the median,—was found in each case by the use of the following formula:

$$S\,D = \frac{\sqrt{\text{sum of (dev.)}^2}}{\text{No.}} - (\text{cor.})^2$$

*The Reliability of the Test.* The method used to prove the reliability of the test was that of self-correlation. Justification for this procedure has already been given.[13] The process of self-correlation consists of comparing the scores of one-half of a single form of the test with the scores of the other half, or else of comparing the scores of duplicate forms of the test given to the same pupils, at the same time, under the same conditions. The nature of the test made it imperative to follow the latter method. If the scores on the two duplicate forms of a test are identical, the reliability is perfect. On the other hand, if the scores vary considerably the test is not reliable and, therefore, worthless. In making this comparison one must find the coefficient of correlation between the two duplicate forms of the test. The coefficient of correlation is a decimal figure used to express the degree to which high values of one variable tend to be accompanied by high values of another variable. If the correlation between two variables is perfect, the coefficient of correlation is represented by the figure 1.00; while if there is no correlation, the coefficient is 0. The self-correlation of the test was found to be high.[14] The coefficients of correlation between the alternative forms of the test—reliability coefficients—for each half-grade are shown in Table 3.

TABLE 3, SHOWING THE RELIABILITY COEFFICIENTS OF THE TWO FORMS OF THE TEST FOR EACH HALF-GRADE BASED UPON A COMPARISON OF THE SCORES OF 1,342 PUPILS, NORMALLY DISTRIBUTED WITHIN EACH HALF-GRADE.

| *Grade* | *No. Pupils* | *r* | *P. E.* |
|---|---|---|---|
| 7 L | 152 | .797 | .019 |
| 7 H | 85 | .805 | .025 |
| 8 L | 150 | .821 | .017 |
| 8 H | 95 | .685 | .036 |
| 9 L | 100 | .844 | .018 |
| 9 H | 100 | .799 | .024 |
| 10 L | 130 | .818 | .019 |
| 10 H | 100 | .820 | .021 |
| 11 L | 100 | .790 | .024 |
| 11 H | 100 | .851 | .016 |
| 12 L | 130 | .731 | .026 |
| 12 H | 100 | .739 | .03 |
| Total No. | 1,342 | | |

*This table should be read as follows*: The coefficient of correlation between Forms A and B—reliability coefficient—for 152 grade 7 L pupils is .797, and the P. E. r is .019. Each of the other grade entries is to be interpreted in the same way.

[13] Cf. page 263 and following.

[14] Cf. page 263 for a statement of the reliability coefficients of five standard educational tests.

In calculating the findings, in the above table, Otis Correlation Charts[18] were used. Like the Pearson "product moment" formula, the Otis "product moment method" is not a means of approximating the coefficient like the "foot rule" or rank methods but is a means of securing an accurate coefficient. The method of finding a coefficient of correlation used in the charts makes use of assumed means of the two variables and automatically corrects these so that the final coefficient is exactly the same as if the true means had been used. The very slight inaccuracy that results from using grouped distributions is compensated for by the saving of time and energy made possible by the use of the charts. The formula used in the chart is as follows:

$$r = \frac{[\Sigma X^2 + \Sigma Y^2 - \Sigma V^2] - 2\Sigma X \Sigma Y - N}{2\sqrt{[\Sigma X^2 - (\Sigma X)^2 \div N][\Sigma Y^2 - (\Sigma Y)^2 \div N]}}$$

in which $V = Y - X$, and X, Y, and V are measured from arbitrary zero points.

*Age norms.* After the grade norms had been made the test papers were re-sorted according to the ages of the pupils with the purpose of making age norms. A few test papers that did not disturb the normal sampling per grade were added to the total at this point in order to have as comprehensive age norms as possible. Neither grade nor section within the grade were considered in the redistribution of papers. It was found that there were 15 age levels running from 10 years to 24 years inclusive. Norms for the first 2 and last 5 age levels, however, are not available because of insufficient pupils for those age levels. The several age levels were defined as follows: 10 year olds consisted of those pupils between 9 yr.'s, 6 mo.'s and 10 yr.'s 5 mo.'s; 11 year olds, of those pupils between 10 yr.'s, 6 mo.'s and 11 yr.'s, 5 mo.'s, etc. Table 4 shows the distribution of scores for each of the several age levels.

[18] Otis Correlation Chart, A. S. Otis, World Book Co., 1922.

TABLE 4, SHOWING THE DISTRIBUTION OF SCORES OF FORM A FOR THE SEVERAL AGE LEVELS WITHIN A COMPOSITE GROUP MADE UP OF 3,265 SECONDARY SCHOOL PUPILS NORMALLY DISTRIBUTED AS TO INTELLIGENCE IN EACH HALF-GRADE

| Age Levels | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Frequencies | | | | | | | | | | | | |
| Score Intervals: | | | | | | | | | | | | | | | |
| 0- 4.9 | .... | 1 | 2 | 4 | 11 | 13 | 9 | 4 | 2 | .... | 2 | .... | .... | .... | .... |
| 5- 9.9 | .... | .... | 8 | 18 | 35 | 60 | 32 | 10 | 1 | 1 | 1 | .... | 1 | .... | .... |
| 10-14.9 | .... | .... | 15 | 43 | 62 | 72 | 60 | 27 | 10 | 3 | 1 | 1 | 1 | .... | 1 |
| 15-19.9 | .... | 2 | 17 | 50 | 67 | 87 | 51 | 28 | 17 | 4 | .... | .... | .... | .... | .... |
| 20-24.9 | 1 | 2 | 16 | 44 | 87 | 99 | 78 | 22 | 14 | 7 | 4 | 1 | 2 | 1 | .... |
| 25-29.9 | .... | 1 | 12 | 41 | 64 | 84 | 83 | 57 | 20 | 6 | 2 | 2 | 3 | .... | .... |
| 30-34.9 | .... | .... | 8 | 25 | 34 | 67 | 74 | 53 | 33 | 12 | 5 | 2 | 2 | .... | .... |
| 35-39.9 | .... | .... | 4 | 19 | 40 | 65 | 66 | 71 | 38 | 21 | 16 | 4 | 1 | .... | .... |
| 40-44.9 | .... | 1 | 2 | 11 | 22 | 47 | 51 | 90 | 52 | 16 | 3 | 2 | .... | .... | .... |
| 45-49.9 | .... | .... | 1 | 4 | 11 | 39 | 63 | 74 | 66 | 17 | 3 | 2 | 1 | .... | .... |
| 50-54.9 | .... | .... | .... | 3 | 6 | 24 | 46 | 46 | 50 | 14 | 1 | 1 | .... | .... | .... |
| 55-59.9 | .... | .... | .... | .... | 11 | 13 | 28 | 50 | 25 | 10 | 3 | 2 | .... | .... | .... |
| 60-64.9 | .... | .... | .... | .... | 3 | 7 | 9 | 24 | 23 | 5 | 4 | .... | .... | .... | .... |
| 65-69.9 | .... | .... | .... | .... | .... | 1 | 5 | 10 | 6 | 3 | .... | .... | .... | .... | .... |
| 70-74.9 | .... | .... | .... | .... | .... | .... | .... | 2 | 3 | 1 | .... | .... | .... | .... | .... |
| 75-79.9 | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... |
| 80-84.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 85-90.0 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Cases | 1 | 7 | 85 | 262 | 453 | 678 | 656 | 568 | 360 | 120 | 45 | 17 | 11 | 1 | 1 |
| Modal Interval | .... | 15-24.9 | 15-19.9 | 15-19.9 | 20-24.9 | 20-24.9 | 25-29.9 | 40-44.9 | 45-49.9 | 35-39.9 | 35-39.9 | 35-39.9 | 25-29.9 | .... | .... |
| Total Range | .... | 0-50 | 0-50 | 0-55 | 0-65 | 0-70 | 0-80 | 0-75 | 0-75 | 5-75 | 0-65 | 10-60 | 5-50 | .... | .... |
| Median | .... | 21.3 | 21.2 | 21.8 | 23.0 | 25.5 | 31.0 | 40.7 | 44.3 | 41.9 | 37.3 | 38.1 | 27.5 | .... | .... |
| P10—P90 | .... | 3.5-41.5 | 9.1-34.6 | 10.5-33.8 | 9.9-41.6 | 9.6-67.0 | 12.1-52.5 | 17.3-57-9 | 22.1-59.2 | 22.9-58.5 | 20.6-59.1 | 23.5-55.0 | 10.5-39.5 | .... | .... |
| P25—P75 | .... | 16.9-26.3 | 13.8-27.4 | 15.1-29.6 | 15.4-32.0 | 16.4-47.1 | 20.8-43.8 | 29.5-49.2 | 33.9-51.7 | 33.8-51.1 | 31.3-44.6 | 30.6-46.9 | 21.9-33.1 | .... | .... |
| Mean | .... | 21.8 | 21.0 | 23.0 | 24.6 | 27.2 | 32.0 | 39.3 | 42.4 | 41.7 | 37.3 | 38.4 | 27.0 | .... | .... |
| S. D. | .... | 11.1 | 9.5 | 10.3 | 12.6 | 13.9 | 14.9 | 14.4 | 13.6 | 13.1 | 14.5 | 11.7 | 10.7 | .... | .... |

**This table should be read as follows: On the score interval 0-4.9 under age level 13, 4 thirteen year olds are found who took Form A of the test. Each of the other entries is to be read in the same way.**

The age norms were based upon all the pupils available for each age, making a total of 3,265 pupils in the several age levels. Basing the age norms upon the redistributed papers gives a more accurate and valuable statement of age norms for pupils in the secondary school than could be secured by making age norms based upon a normal sampling for age that would take pupils from the elementary school since the age norms presented in the study are for pupils already in the secondary school. The age norms of the test, consisting, as in the case of grade norms, of the means of Form A scores for the several age levels, are shown in Table 5.

TABLE 5, SHOWING AGE NORMS BASED UPON THE MEANS OF THE ACCEPTABLE CORRECTIONS FOR EACH AGE LEVEL DERIVED FROM THE FORM A SCORES OF A COMPOSITE GROUP MADE UP OF 3,265 SECONDARY SCHOOL PUPILS NORMALLY DISTRIBUTED AS TO INTELLIGENCE IN EACH HALF-GRADE.

| *Age Levels* | *Possible Corrections* | *No. Pupils* | *Mean Achievement in Acceptable Corrections* | *Mean Achievement in Percentages of Acceptable Corrections* |
|---|---|---|---|---|
| 11:6-12:5 | 90 | 85 | 21.0 | 23.3 |
| 12:6-13:5 | 90 | 262 | 23.0 | 25.6 |
| 13:6-14:5 | 90 | 453 | 24.6 | 27.3 |
| 14:6-15:5 | 90 | 678 | 27.2 | 30.2 |
| 15:6-16:5 | 90 | 656 | 32.0 | 35.6 |
| 16:6-17:5 | 90 | 568 | 39.3 | 43.7 |
| 17:6-18:5 | 90 | 360 | 42.4 | 47.1 |
| 18:6-19:5 | 90 | 120 | 41.7 | 46.3 |

*This table should be read as follows*: The age norm for 13 year olds, which is based upon the mean achievement in acceptable corrections derived from the Form A papers (each of which contains 90 possible corrections) of 262 secondary school pupils, is 23.0; and the mean achievement in percentage of acceptable corrections for this group is 25.6. Each of the other entries is to be interpreted in the same way.

Age norms are presented only for the following age levels: 12, 13, 14, 15, 16, 17, 18, and 19. The frequencies for the other age levels are included in order to give a true picture of the several age levels found in the secondary school.

The value of representative age norms lies primarily in the basis that they offer for the derivation of subject ages and subject quotients. By means of the subject age an administrator can learn whether or not pupils are being retarded chronologically in order to give an appearance of efficiency in relation to grade standards. Again, by means of the subject quotient, which is found by dividing the subject age by the chronological age and multiplying by 100 to remove decimals, he can ascertain whether or not pupils have average, superior or inferior ability in that subject. Another advantage is found in the fact that the subject age can be entered in a composite score of a number of achievement tests from which the educational age and the educational quotient of a pupil may be derived. In general, representative age norms serve a most useful purpose by enabling profitable comparisons to be made thus enhancing considerably the value of a test.

In view of the fact that the requirements of the standard test criteria

were satisfactorily met, it seems reasonable to conclude that the test is, on the whole, an efficient and satisfactory instrument with which to measure the accomplishment and to indicate the needs of secondary school pupils in the mechanics of written expression.

*The Findings of the Test.* The most important result of the administration of the test was the opportunity it offered to make a diagnosis of the local situation in one phase of the field of English. Two hundred Form A test papers, accordingly, were selected from each half-grade, great care having been taken to insure that the test papers represented the work of pupils normally distributed as to intelligence within each half-grade, and the frequency of acceptable corrections of each error was determined and recorded. After the above data were tabulated, findings showing the accomplishment of the pupils were determined.

It should be noted that the findings of the present study are based upon a set test which controlled the pupil's response. No opportunity was given the pupil to "evade" difficulties by the adoption of other forms of expression of which he is certain, as is the case in free composition.

The total correction mean, revealing the average achievement in the correction of all errors incorporated in the test, shown in the Graph, indicates that gains are made in the number of acceptable corrections throughout the several grades of the secondary school with the exception of grade 8L in which improvement seems to be at a standstill. The greatest gains were made in grades 8H, 9H, and 10. Grade 9H, in which a minimum of forty lessons in grammar is required by the course of study,[16] has the distinction of showing a greater gain than any other half-

TABLE 6, SHOWING THE EXTENT TO WHICH EACH OF THE 64 LANGUAGE ERRORS IN THE TEST HAS BEEN ELIMINATED IN EACH HALF GRADE OF THE JUNIOR SENIOR HIGH SCHOOL BASED UPON THE CORRECTED ERRORS OF FORM A TEST PAPERS WRITTEN BY 2,400 PUPILS DISTRIBUTED INTO NORMAL GROUPS OF 200 PUPILS WITHIN EACH HALF GRADE.

| Grades | 7 L | 7 H | 8 L | 8 H | 9 L | 9 H | 10 L | 10 H | 11 L | 11 H | 12 L | 12 H | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Error No. | Percentage of Acceptable Corrections at End of Each Half Grade | | | | | | | | | | | | Total Gain in Per Cent |
| 1a | 19 | 24 | 30 | 39 | 54 | 59 | 79 | 77 | 89 | 83 | 92 | 89 | 70 |
| 1b | 20 | 26 | 30 | 34 | 48 | 45 | 47 | 54 | 56 | 56 | 59 | 66 | 46 |
| 2 | 1 | 1 | 0 | 2 | 1 | 6 | 3 | 4 | 6 | 8 | 10 | 12 | 11 |
| 3 | 1 | 1 | 1 | 2 | 4 | 8 | 9 | 17 | 22 | 28 | 29 | 36 | 35 |
| 4 | 8 | 9 | 9 | 14 | 13 | 30 | 36 | 42 | 47 | 56 | 55 | 56 | 48 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6a | 60 | 59 | 66 | 69 | 81 | 85 | 84 | 92 | 96 | 92 | 95 | 94 | 34 |
| 6b | 2 | 1 | 1 | 4 | 9 | 19 | 23 | 38 | 42 | 52 | 48 | 68 | 66 |
| 7 | 3 | 2 | 2 | 0 | 1 | 2 | 3 | 8 | 10 | 13 | 15 | 42 | 39 |
| 8 | 4 | 8 | 10 | 16 | 18 | 23 | 26 | 29 | 30 | 34 | 34 | 31 | 27 |
| 9 | 6 | 9 | 6 | 10 | 8 | 23 | 21 | 25 | 34 | 33 | 37 | 37 | 31 |
| 10 | 6 | 10 | 10 | 18 | 14 | 29 | 31 | 43 | 47 | 54 | 60 | 57 | 51 |
| 11 | 12 | 20 | 16 | 18 | 24 | 35 | 36 | 41 | 51 | 47 | 52 | 59 | 48 |
| 12 | 1 | 2 | 2 | 5 | 6 | 10 | 14 | 24 | 30 | 32 | 34 | 35 | 34 |
| 13 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 4 | 4 | 6 | 7 | 13 | 13 |
| 14 | 42 | 56 | 56 | 69 | 69 | 85 | 92 | 95 | 94 | 92 | 96 | 95 | 53 |

(Table continued on next page)

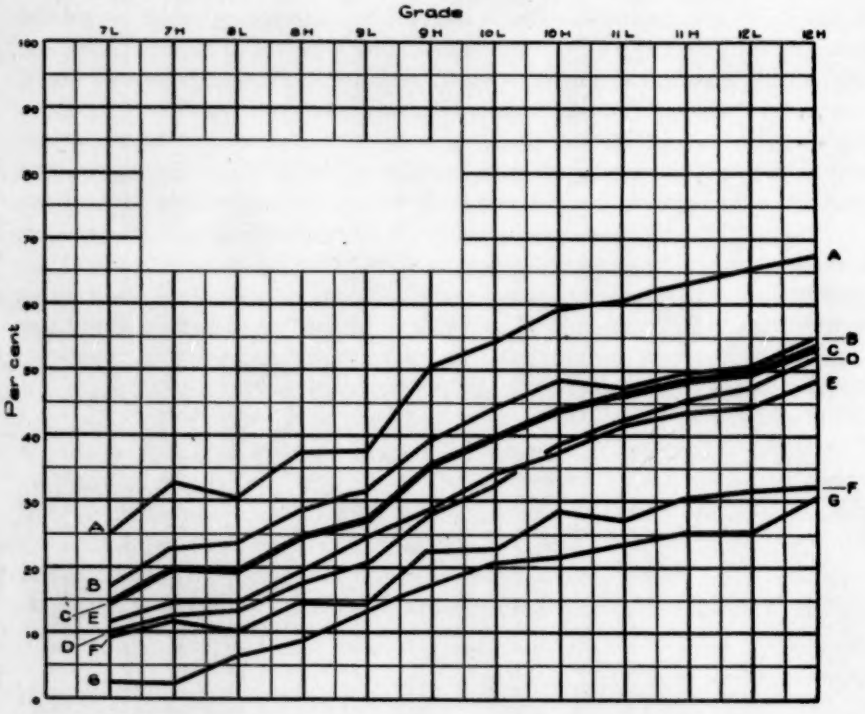
[16] Course of Study Monographs, Los Angeles City High Schools, No. 1, p. 77, June, 1922.

TABLE 6 (Continued)

| Grades | 7 L | 7 H | 8 L | 8 H | 9 L | 9 H | 10 L | 10 H | 11 L | 11 H | 12 L | 12 H | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Error No. | Percentage of Acceptable Corrections at End of Each Half Grade | | | | | | | | | | | | Total Gain in Per Cent |
| **Sentence Structure** | | | | | | | | | | | | | |
| Mean | 11 | 13 | 14 | 18 | 21 | 30 | 33 | 40 | 43 | 46 | 48 | 53 | |
| 15 | 69 | 80 | 76 | 84 | 81 | 87 | 85 | 90 | 91 | 89 | 91 | 89 | 21 |
| 16 | 15 | 25 | 18 | 30 | 32 | 44 | 53 | 59 | 60 | 68 | 64 | 67 | 53 |
| 17 | 29 | 48 | 36 | 53 | 59 | 66 | 74 | 78 | 77 | 78 | 83 | 80 | 52 |
| 18 | 20 | 30 | 30 | 24 | 30 | 43 | 46 | 52 | 57 | 56 | 57 | 53 | 33 |
| 19 | 85 | 90 | 89 | 95 | 87 | 94 | 87 | 91 | 91 | 91 | 88 | 86 | 1 |
| 20 | 11 | 18 | 17 | 19 | 21 | 29 | 33 | 37 | 35 | 39 | 37 | 35 | 24 |
| 21 | 2 | 2 | 1 | 5 | 9 | 19 | 24 | 39 | 42 | 52 | 50 | 64 | 62 |
| 22 | 43 | 51 | 60 | 61 | 64 | 84 | 85 | 90 | 92 | 92 | 95 | 93 | 50 |
| 23 | 31 | 36 | 31 | 41 | 43 | 56 | 58 | 61 | 59 | 61 | 59 | 66 | 35 |
| 24 | 47 | 58 | 60 | 66 | 67 | 83 | 83 | 90 | 89 | 91 | 91 | 91 | 44 |
| 25 | 20 | 29 | 25 | 28 | 37 | 48 | 55 | 66 | 72 | 65 | 69 | 79 | 60 |
| 26 | 7 | 10 | 10 | 12 | 14 | 25 | 30 | 38 | 39 | 47 | 45 | 50 | 44 |
| 27 | 6 | 10 | 8 | 22 | 18 | 39 | 51 | 51 | 56 | 65 | 58 | 71 | 65 |
| 28 | 13 | 17 | 14 | 25 | 24 | 38 | 41 | 47 | 46 | 49 | 52 | 54 | 42 |
| 29 | 7 | 9 | 8 | 15 | 17 | 38 | 46 | 55 | 58 | 68 | 66 | 74 | 68 |
| 30 | 12 | 19 | 18 | 24 | 23 | 36 | 45 | 48 | 51 | 52 | 60 | 59 | 48 |
| Grammar Mean | 26 | 33 | 32 | 38 | 39 | 52 | 55 | 60 | 62 | 64 | 65 | 68 | |
| 31 | 13 | 15 | 12 | 15 | 16 | 23 | 21 | 30 | 28 | 33 | 31 | 33 | 20 |
| 32 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 33 | 15 | 20 | 22 | 31 | 30 | 47 | 54 | 59 | 57 | 61 | 69 | 67 | 53 |
| Diction Mean | 10 | 12 | 11 | 15 | 15 | 23 | 24 | 30 | 28 | 32 | 33 | 33 | |
| 34 | 4 | 8 | 7 | 10 | 14 | 19 | 22 | 22 | 24 | 26 | 27 | 31 | 28 |
| Paragraph Mean | 4 | 8 | 7 | 10 | 14 | 19 | 22 | 22 | 24 | 26 | 27 | 31 | |
| 35 | 49 | 57 | 60 | 61 | 70 | 76 | 73 | 72 | 76 | 71 | 71 | 83 | |
| 36 | 16 | 18 | 18 | 19 | 33 | 33 | 39 | 47 | 49 | 49 | 51 | 56 | 34 |
| 37 | 46 | 51 | 54 | 63 | 73 | 84 | 91 | 92 | 94 | 95 | 96 | 95 | 40 |
| 38 | 4 | 8 | 7 | 11 | 17 | 21 | 26 | 37 | 36 | 41 | 41 | 45 | 41 |
| 39a | 2 | 5 | 2 | 11 | 11 | 23 | 33 | 39 | 45 | 55 | 52 | 57 | 56 |
| 39b | 15 | 18 | 24 | 28 | 29 | 42 | 51 | 48 | 58 | 70 | 61 | 65 | 51 |
| 39c | 7 | 4 | 5 | 11 | 13 | 17 | 26 | 29 | 38 | 37 | 37 | 42 | 35 |
| 39d | 2 | 2 | 3 | 5 | 9 | 16 | 26 | 28 | 40 | 51 | 49 | 59 | 58 |
| 39e | 28 | 33 | 30 | 43 | 55 | 63 | 72 | 66 | 76 | 79 | 78 | 75 | 47 |
| 39f | 12 | 18 | 21 | 24 | 31 | 45 | 52 | 54 | 63 | 58 | 57 | 59 | 47 |
| 39g | 1 | 1 | 2 | 6 | 3 | 4 | 11 | 12 | 17 | 16 | 14 | 17 | 16 |
| 40 | 20 | 26 | 30 | 34 | 48 | 45 | 47 | 54 | 56 | 56 | 59 | 66 | 46 |
| 41a | 8 | 16 | 8 | 19 | 29 | 30 | 41 | 42 | 51 | 50 | 52 | 57 | 49 |
| 41b | 3 | 2 | 2 | 5 | 8 | 9 | 9 | 15 | 24 | 24 | 21 | 32 | 29 |
| 42 | 2 | 6 | 3 | 3 | 5 | 13 | 19 | 24 | 31 | 28 | 33 | 36 | 34 |
| 43 | 6 | 6 | 5 | 8 | 10 | 15 | 19 | 26 | 27 | 25 | 30 | 35 | 29 |
| 44 | 11 | 11 | 15 | 14 | 16 | 19 | 18 | 19 | 18 | 25 | 23 | 23 | 12 |
| 45a | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 4 | 5 | 5 | 9 | 12 | 12 |
| 45b | 0 | 0 | 0 | 2 | 1 | 1 | 3 | 3 | 6 | 6 | 10 | 11 | 11 |
| Punctuation Mean | 13 | 15 | 16 | 20 | 25 | 30 | 35 | 39 | 43 | 45 | 45 | 49 | |
| 46a | 7 | 13 | 7 | 11 | 15 | 20 | 33 | 33 | 27 | 33 | 35 | 54 | 47 |
| 46b | 1 | 1 | 2 | 4 | 2 | 5 | 6 | 11 | 10 | 13 | 16 | 24 | 24 |
| 46c | 15 | 12 | 18 | 16 | 18 | 19 | 30 | 27 | 28 | 24 | 36 | 37 | 22 |
| 47 | 12 | 17 | 14 | 19 | 32 | 34 | 38 | 40 | 45 | 43 | 39 | 42 | 30 |
| 48 | 12 | 16 | 14 | 19 | 32 | 34 | 38 | 40 | 45 | 43 | 39 | 42 | 30 |
| 49 | 12 | 20 | 25 | 24 | 34 | 40 | 45 | 57 | 45 | 49 | 48 | 54 | 43 |
| 50 | 53 | 63 | 62 | 77 | 81 | 88 | 92 | 97 | 92 | 94 | 97 | 97 | 45 |
| 51 | 13 | 24 | 22 | 33 | 32 | 42 | 53 | 57 | 63 | 68 | 69 | 71 | 58 |
| 52 | 40 | 50 | 57 | 64 | 69 | 80 | 75 | 88 | 81 | 87 | 85 | 83 | 44 |
| Miscellaneous Mean | 18 | 24 | 24 | 29 | 32 | 40 | 45 | 50 | 48 | 60 | 51 | 56 | |
| Total Correction Mean | 16 | 21 | 20 | 25 | 28 | 36 | 40 | 45 | 47 | 50 | 51 | 55 | |

**This table should be read as follows: In the 200 papers examined from grade 7 L, Error 1a was corrected 38 times, making a total correction for this error of 19 per cent. Each of the other entries is to be interpreted in the same way.**

GRAPH SHOWING THE TRENDS OF MEAN SCORES BY HALF-GRADES, IN PERCENTAGES OF ACCEPTABLE CORRECTIONS OF EACH ERROR-GROUP, BASED UPON ERRORS CORRECTED IN FORM A TEST PAPERS BY 2,400 JUNIOR SENIOR HIGH SCHOOL PUPILS DISTRIBUTED INTO NORMAL GROUPS OF 200 IN EACH HALF-GRADE.




Legend: A indicates the trend of Means for the Errors Corrected in the Grammar Group; B, Miscellaneous Errors; C, the Total Group; E, the Punctuation Group; D, the Sentence Structure Group; F, the Diction Group; and G, the Paragraph Organization.

*The graph should be read as follows*: The mean achievement in terms of percentage of acceptable corrections of the grammar group of errors in grade 7 L is 25.8; in grade 7 H, 33.3; in grade 8 L, 31.5; etc. Points on the other lines showing trends in percentages of acceptable corrections are to read in the same way.

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grade. The least gains were made in grades 9L, 11L, and 12L, the last showing a gain of only one per cent. The total increase in the percentage of acceptable corrections of all the errors throughout the several half-grades amounts to thirty-nine per cent.

The gains on the several groups of errors as shown by the total increase in the number of acceptable corrections for each group throughout the several half-grades are not uniform, nor are the several levels of achievement closely parallel. The trends of the mean scores for half-grades in percentages of acceptable corrections for each error group are shown in

the graph. Acceptable corrections for the grammar group of errors not only remain on the highest level of achievement above the total correction mean but also show a high total gain throughout the twelve half-grades of the secondary school. Acceptable corrections for the sentence structure group also show a high total gain but remain below the total correction mean in level of achievement. The total gain as shown by the increase in the number of acceptable corrections for the sentence structure group is practically equal to that of the miscellaneous group, both groups paralleling the total correction mean about the same distance on either side of it throughout the several grades. The least gains in the number of satisfactory corrections are evident in paragraphing and diction, the latter showing a total increase in the number of acceptable corrections of only twenty-three per cent. Achievement in the elimination of diction and paragraphing errors remains on the very lowest levels throughout the several grades. These facts make it possible to conclude that of all the errors incorporated in the test those in punctuation, diction, and paragraphing are the most stubbornly persistent, that errors in sentence structure are decidedly persistent, closely paralleling in this respect the punctuation errors, and that errors in grammar are the least persistent in the secondary school.

There is a notable disparity in the mastery of individual errors in some of the groups, especially apparent in grade 12H. Achievement in overcoming the individual errors in sentence structure in grade 12H, in which the average accomplishment reaches its highest point, ranges from 0 per cent to 94 per cent. The same wide disparity exists for the punctuation group of errors and the miscellaneous group, but the increase in mastery of grammar errors reveals a slightly appreciable trend toward successful achievement, the lowest percentage of acceptable corrections for any error in the latter group being 35 per cent and the highest 92 per cent. The extent to which each of the errors in the test is eliminated in the secondary school is shown in Table 6. Approximately 42 per cent of the errors here listed, for each of which a gain of more than 39 per cent is easily possible, show less total gain in percentages of acceptable corrections than does the total correction mean. The above findings, show clearly that secondary-school pupils owing perhaps to inadequacies in the course of study used, neglect to put into practice much of what they have been and are being taught.

The measures of central tendency and variability based upon the distribution of all the Form A scores for the several half-grades also throw considerable light upon the language equipment of pupils about to graduate from the senior high school. The highest 10 per cent of the pupils in grade 8 equal or excel in this phase of English the lowest 10 per cent of the pupils in Grade 12H. Ten per cent of the senior A pupils graduate with a language equipment equal or inferior to the average of 10L pupils. Approximately 25 per cent of the 12H pupils fail to attain the average score of 10H pupils which indicates that 25 per cent of the senior A's are two years retarded.

A comparison of the findings for individual errors with the findings of other investigators is difficult to make owing to the differences in procedure of the several studies. The correlation between results of set tests, such as those here used, and those based upon free composition has not as yet been determined. A few comparisons, however, may be made. There is essential agreement between the findings of the present study and those of Briggs' study for Errors No. 16, No. 35, No. 36, and No. 40 in grades 7, 8 and 9. The same statement is true of the findings for Errors No. 14, No. 15, No. 24, No. 30, No. 31, No. 32, No. 33, No. 35, No. 37, and No. 38 in grade 12H and the findings of H. E. Potter's study; it is likewise true of the findings for Errors No. 15 and No. 30 in grade 7L and the findings of Charters' study. The shrewdness of pupils in adopting circumlocutions and in avoiding constructions that require the less common types of punctuation, etc., in free composition is, no doubt, the chief cause of the lack of agreement in the remainder of the findings for individual errors of the present study and the findings of other workers.

The definite statement of objectives in the course of study seems to be an important factor in raising achievement towards attaining those objectives in the grades for which they are stated. Definite grade objectives are stated in the Los Angeles Course of Study requiring the mastery of the correct constructions for 33 of the 64 errors included in the test. For 23 of these errors the number of acceptable corrections is greater in the grades in which their elimination is stated as definite objectives than in any other grades.

Failure to state an objective appears to be, in some cases, disastrous. The elimination of Error No. 7, the dangling participle, is not stated as a definite objective for any grade in the secondary school. For this reason, probably, achievement in the correction of this error throughout the grades is very low. The same is true of Errors No. 5, No. 8, No. 13, No. 26, No. 41b, No. 42, No. 45a, and No. 45b. The procedure most productive of desirable results would seem to be a direct attack on a specific error in the appropriate half-grade with steady support from all other grades.

The findings of the study have indicated, within the limits of the investigation, the problems in English in the secondary school. Both strength and weakness have been revealed. It now remains to state such remedial procedure as is suggested by the findings.

*Remedial Suggestions.* The average gain in the total number of corrections in the secondary school, as has already been stated, is 39 per cent. This total gain seems far too small. Would not the general application of Morrison's "Mastery formula"[17]; i. e. "Pre-test, teach, test the result, adapt procedure, teach and test again to the point of actual learning" be more productive of more satisfactory results?

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[17] Morrison, Henry C. *The Practice of Teaching in the Secondary School,* p. 79.

It seems reasonable to expect a real and sizeable total gain in the correction of any error on which the percentage of acceptable corrections in grade 7L is below 61 per cent. Certainly, then, all of those errors listed in the table (page 272) of which the levels of achievement as shown by the percentages of acceptable corrections are below the "total correction mean" and of which the total gains in corrections are low should be the object of vigorous attack not only in the grades for which their elimination is (or should be) required by the statement of objectives but also in the succeeding grades.

Definite objectives should be stated for each half-grade since errors are not general but specific. For the elimination of 31 of the 64 errors included in the test there are no specific statements of grade objectives to be found in the course of study followed by the pupils who took the test. The corrections of these errors are not so numerous as for those for which objectives requiring their elimination are stated. The elimination of such errors as No. 4, No. 5, No. 7, No. 8, No. 10, No. 11, No. 13, No. 14, No. 26, No. 30 to No. 33 inclusive, No. 38, No. 39a, No. 39g, and No. 45, No. 49, No. 50, No. 51, and No. 52 ought, therefore, to be made more certain by means of listing them as specific objectives and teaching correct forms in the proper grades as determined by the capacities and needs of the pupils.

In those grades for which specific objectives are stated but in which achievement is not higher than in any other grade of the secondary school, a more effective attack is necessary. In no case does the course of study used by these pupils seem to state an objective specifically for a grade for which grade such statement might be deemed questionable. *Not curricular changes, but curricular additions and a more psychological administration of the curriculum seem to be necessary.*

To account for slight gains, retrogressions, and for those cases in which achievement remains stationary, it is assumed that too feeble support to the grades making the attack is given by the preceding and succeeding grades. After a construction has been thoroughly studied, and its mastery by the pupils proved by the use of standardized tests, it should be taken for granted in the succeeding grades that it has been learned; and any violation of such construction should be heavily penalized. Pupils, of course, should have called to mind by means of standard diagnostic tests which of the errors considered will lead to heavy penalties. This procedure, it is thought, would aid considerably in eliminating the carelessness of secondary pupils.

Sentence-structure and punctuation, it seems, should be consistently treated together. An examination of the graph (page 274) shows that the mean for each of these groups closely parallels the other, and that a gain in the number of acceptable corrections for one is accompanied by a like gain for the other. Difficulties in sentence structure, as every teacher of English knows, frequently lead to errors in punctuation; consequently, increased mastery of the former affects favorably the latter.

Achievement in paragraphing, diction, sentence structure, and punctuation is below the composite correction mean in all the grades. A more vigorous and scientific attack, therefore, should be made on these various types of errors, not only in the grades for which the objectives leading to their elimination are stated, but in all the grades of the secondary school.

With the thoroughgoing adoption of these suggestions it seems reasonable to believe that the level of achievement in the elimination of language errors in the secondary school would be forced decidedly upward, and that much of the burden of re-teaching now falling upon the upper grades would be removed. Satisfaction in the attainment of desirable objectives would be experienced by all concerned, and more time would be had for such desirable and valuable activities as the comprehension and appreciation of the great literatures of the world.

# BOOK CHAT

## One Abuse of Books

The editor of THE QUARTERLY essays to point out one abuse of books that is well known and too widely practiced where practiced at all. He refers to the mimeographing of copyright material from text-books and the distribution of the material for the use of pupils—a practice he once observed even within the walls of a university. A case in point will illustrate what is sometimes done.

In a high school where there has been meager provision of music books and where the supervisor is ambitious for the success of her department, the supervisor lifted page content bodily from copyright music books of several publishers, had it mimeographed and distributed to the pupils for their use. This was a plain violation of the copyright laws of the United States and nothing short of petty pilfering. Besides, the plan had no virtue even in economy. A high salaried supervisor's time and energy and the cost of mimeographing out-weighed any saving to the school. Music books should have been provided in the first place, and then they would have been available for other classes through a long term of years, and there would have been no petty larceny committed in the name of education.—THE EDITOR.

## Books They Are Reading

*Would that some charitable soul, after losing a great deal of time among the false books and alighting upon a few true ones, which made him happy and wise, would name those which have been bridges or ships to carry him safely over dark morasses and barren oceans, into the heart of sacred cities, into palaces and temples.*—RALPH WALDO EMERSON.

HOMER MARTIN,
PRINCIPAL OF SANTA BARBARA HIGH SCHOOL, SANTA BARBARA—

As *Beau Geste* glorifies comradeship between brothers in the field of romantic adventure, so *Sorrell and Son* by Deeping glorifies comradeship between father and son in the field of stern reality. Some unconventionality in the last part of *Sorrell and Son* may perhaps render the book undesirable for young people, but every father and teacher should read the book.

No matter of what nationality we may be, there are times when we all wish we were Irish. Donn Byrne's new book, *Hangman's House,* breathes with the very breath of Ireland. Irish land, Irish people, Irish customs, Irish romance and idealism—all are there and expressed in a language so beautiful in sound and imagery that one wonders whether it be true that the great writers are no more.

SUSAN M. DORSEY,
SUPERINTENDENT OF SCHOOLS, LOS ANGELES—

Just what have I been reading? I shall not mention those books read by everybody, such as *Why We Behave Like Human Beings* by George A. Dorsey, *The*

*Letters of Walter H. Page, Benjamin Franklin, The First Civilized American* by Phillips Russell. I shall comment on some others not so commonly spoken of.

*The Decline of Man,* by Coblentz, may be scientific, or not (let the scientists settle that); it does raise a fair question as to whether man is intelligent enough to continue the adaptation of civilization to the whirlwind of changes brought about by man's own activities.

The chapter in *The Meaning of a Liberal Education,* by Everett Dean Martin, which bears the caption "Education versus Propaganda" is timely. The writer finds the people's "devotion to causes too narrow, too impatient, too uncritical." He finds that *real success* is being achieved in those matters that do not lend themselves to propaganda, such as the arts and sciences. He claims that the "first social obligation of any man is his own education." This is a good chapter for educators to read.

*The Making of the Modern Mind,* by John Herman Randall, Columbia University, helps any student "to understand, appreciate, and judge the science, the religion, the art, the moral ideals of today" through an understanding of "those great achievements in the past of mankind that have created the home in which man's spirit now moves." It is a book to read.

*Jesus, Man of Genius,* by Jay Middleton Murry, is an attempt by a thoughtful, reverent spirit to account for the Christ life and influence without admitting its divinity. The writer admits "Jesus was more, much more, than a man of genius. To the creative imagination of the great man of genius was added in him the power to live and die for his vision of things to come." Some readers will say, "From the reading of this book, I have become fully convinced that Jesus was divine."

EDITH M. SPRAGUE,
MANUAL ARTS HIGH SCHOOL, LOS ANGELES—

When, two years ago, Dr. Wolfgang Koehler, professor at the University of Berlin, was lecturing at various American universities, it was remarked by one of the Stanford professors that here was one of the very few Germans who succeeded in accomplishing something during the years 1913 to 1917. Those years Dr. Koehler spent in Africa where, at the Anthropoid Station in Tenerife, he collected the data regarding the personalities and performances of anthropoid apes which he has presented so well in his book, *The Mentality of Apes.*

To begin with, Koehler is much more generous than Thorndike in ascribing intelligence to the actions of animals. He observes that there are plenty of situations in which a human being acts with very little intelligence. Any performance is unintelligent whose pattern is too complicated for the performer to comprehend. If the task set before the animal is adapted to his mentality, the animal will behave intelligently; he will direct his behavior without trial and error to achieve a desired end. He will do so in situations which he could not possibly be equipped by instinct to meet. Given a situation sufficiently simple, even a hen will behave with intelligence.

Through Koehler's sympathetic eyes we see Neuva and Sultan, Grande and little Koko angling for food placed at carefully arranged distances from their cages, improvising sticks from available material, fitting two appropriate pieces of bamboo together when either piece alone was too short, remembering to go back and get a box in another room when the fruit was hung too high to be reached even by the best jumper, building a higher structure by placing one box on top of another when one alone would not suffice, and removing obstacles of varying degrees of difficulty.

By no means the least interesting part of the study is the careful distinction Koehler makes between intelligent and unintelligent performance, and the boundary lines he finds between the two. Koko and Sultan learned, after careful consideration of the situation and some fruitless attempts at other solutions, to use a box to get a stick to angle for the unattainable fruit. The stupider apes were quite helpless

in the same situation. No ape understood the dynamics of building sufficiently to build a solid structure of three boxes in height. There was always something wrong about the balance, and by the problem of gravity they were quite as mystified as most of us are by the intangible fourth dimension. The more intelligent apes solved one problem of indirection which left baffled a normal child of two years. (P. 254.)

Probably one of the most fascinating things about Koehler is his approach to the problem of finding the capacity of his subjects for intelligent accomplishment, his patience in adapting the problems so that they lay just within the powers of the animals and at the same time taxed their capacity to the limit. No teacher of human pupils can read the book without a desire to emulate his technique and to expand into his fine power of interpretation.

To some there is an even more fascinating Koehler, the propounder of a new psychology, in which role he stands between Watson and Thorndike on the one side and the association psychologists of the old school on the other, affirming that there is a place for the study of the elusive quality of consciousness, and that our old conception of the association of ideas is all wrong, starting as it does with *parts* instead of with whole situations as units in consciousness. Those who like to play with these ideas will want to search further in another translation of the new Gestalt-psychology, *The Growth of the Mind*, by Kurt Koffka, University of Geissen. The possibilities of this newer psychology in the field of education seem limitless.

DR. H. B. WILSON,

SUPERINTENDENT OF SCHOOLS, BERKELEY, CALIFORNIA—

The most interesting volume which I have read this year is entitled *The Menace of Nationalism in Education*, by Scott. It is published by the Macmillan Company. It has to do with the effects of what is taught, and particularly of the spirit in which that teaching takes place, on the attitude which the children, the oncoming citizens, later take toward nations about which they have studied. The author examines the textbooks of various nations—France, Germany, England, America—to note their content. In light of this examination and the portrayal which he presents, he leads the reader to think of the effects of the teaching upon the children.

In discussing France's textbooks, he shows their attitude toward England in the topics which they treat lightly or omit and the topics which they treat unfairly. He also calls attention to topics which, from his English point of view, he considers are properly dealt with. He also examines the German decrees, calling attention to their narrow implications and to the over-stress on nationalism as against internationalism. He then goes into their textbooks to consider the same topic. In his examination of British education, with reference to its treatment of France, Germany, and the United States, he is inclined to reach the conclusion, very naturally perhaps writing from the point of view he does, that the British textbooks are a little fairer than are the textbooks of other nations.

Undoubtedly the author has opened a line of investigation and study which needs wide attention. There is little question but that the schools throughout the various nations are now, by what they teach and by the spirit in which they teach, determining the attitude which will actuate the present children when they come to occupy controlling relations in various nations. The great need is more fairness and liberality in the consideration of what other nations have done, and a greater appreciation of the contribution to the total progress of the race of the finest and best things that each nation does. Hate and unwarranted prejudice could be very largely eliminated within a generation if the teaching that takes place in all the schools of all the nations could emphasize interdependence, cooperation and brotherhood as over against the present emphasis of the righteousness of the nation in which one lives as contrasted with the weaknesses and shortcomings of other nations.

# *ON TEACHING ENGLISH COMPOSITION*

On a recent motor trip we came upon a high school by the roadside that was not listed in the California directory.

"This must be a new school," we thought, "but it's worth looking into."

The principal was very courteous.

"What class would you like to visit?" he asked.

"A class in English composition," we replied.

"There is no class in composition today," said the principal, "but you may talk with the teacher of English. This is her conference hour, and I fancy she is not very busy."

And he introduced us.

"What are your chief problems in teaching composition?" we asked.

"Vocabulary, thought-sequence, and (incidentally) paragraphing," she answered.

"Not spelling, punctuation, and sentence-structure?" we gasped in astonishment.

"Not at all," she replied. "Our spelling is phonetic. Any child who has mastered the alphabet can spell any word in the language. We use a simple system of punctuation that is taught in connection with sentence-structure. And sentence-structure is almost entirely taken care of by the elementary schools. No pupil can enter the high school until he both speaks and writes in correct sentences. We deal only with the refinements of composition and every other department in the high school is as much responsible for those things as is the English department."

"Such ideal conditions are to be found nowhere else in California," we said. "California!" she exclaimed. "You crossed the California line five miles back. This school is in Utopia."

On our way back to the States we reflected that nine-tenths of the work in English composition done by our high schools ought never to be required of them; but since conditions are as they are, the teacher of English must take the pupils as she finds them and apply the proper remedy. The teacher of freshman English composition must deal largely with sentence problems, and for that purpose no other book offers so much help as Hitchcock's *Junior English Book*.

For the second, third, and fourth years, Hitchcock's *High School English Book* continues the work on fundamentals so well begun in the first and, in addition, introduces work of the sort done in Utopia. There is work on winning possession of ideas both by observation and by reading; on organizing material in proper sequence; and on sentence craft, which is the beginning of style.

When we began selling books in California eight years ago, there were just two schools in the state that used the Hitchcock books. Now there are one hundred.

HENRY HOLT AND COMPANY,
149 New Montgomery Street, San Francisco.

# *MACMILLAN'S MESSAGE*

Just how do you high school executives and teachers go about selecting classics to be studied and read in your English courses? You are given wide latitude in the selection of titles; there are dozens of attractive editions of the most widely read classics, varying in price from a few cents to more than a dollar each. No one factor—price, type, binding, illustrations, size—can be the determining one; all must be taken into consideration. The day is long past when price alone determined the edition to be used. How then do you go about the job of selection?

Naturally you try to find an edition for each title that will combine as many of the desirable qualities as possible. I should like to suggest the beautiful new *Modern Readers' Series* as one which will help solve your problem. The Macmillan Company has long recognized the need for a series of English and American classics that should contain not only the old tried and true favorites, but a liberal sprinkling of modern literature, poetry and drama, attractively bound and printed, and moderately priced. We are meeting this need with the rapidly growing *Modern Readers' Series.*

There are now available forty volumes, including a few intended for college reading, but most of them prepared especially, with biographies and notes where desirable, for high school use. Many other titles are in active preparation and more in prospect. Included among those already published are such widely used classics as Dana's *Two Years Before the Mast,* Dickens' *David Copperfield,* and *Tale of Two Cities,* Cooper's *The Pathfinder,* and *The Last of the Mohicans,* London's *Call of the Wild* Scott's *Ivanhoe,* Thackeray's *Vanity Fair,* Emerson's *Essays,* Riis' *Making of An American,* and also such desirable but hitherto unavailable titles as Allen's *Kentucky Cardinal* and *Aftermath* (in one volume), Garland's *Son of the Middle Border,* Porter's *Scottish Chiefs,* White's *A Certain Rich Man,* Wilkinson's *Contemporary Poetry* and many others. Many of the longer novels have been judiciously abridged for high school students.

The books in the *Modern Readers' Series* are uniformly bound in attractive and durable blue cloth, printed from large, clear type on a good quality paper with good spacing and margins, and are priced uniformly at eighty cents ($.80) each. Many of them are illustrated.

We shall be glad to send you an attractive booklet listing the titles now ready and in preparation and briefly describing each. T. C. M.

THE MACMILLAN COMPANY, 350 Mission Street, San Francisco.

# *SOUTH-WESTERN PUBLISHING COMPANY*

Commercial education as it is today is a comparatively recent development, which had its impetus in the industrial expansion of the 19th century. In the early eighties, little training was offered for men and women desiring a business career. Records kept by business concerns were so crude and rudimentary in character that those handling them required no special training. When business became more complicated, better trained employees were required, and it was then that the private school came into existence to meet this demand. Toward the end of the eighties, although the innovations was opposed by many educators, the demand for commercial courses in high schools became so great that school administrators were compelled to yield to the wishes of their communities and establish these courses. The development of commercial education has been rapid, and today this is the largest department in many high schools.

The lack of suitable textbooks was a serious handicap during the early stages of business education. Early texts, compared with those of today, seem totally inadequate to equip men and women for participation in business life. As a result of this dearth of commercial texts, publishing houses began to busy themselves with the production of texts suitable for this special training. The *South-Western Publishing Company* devotes its energies exclusively to the production of commercial textbooks. Although the company now publishes a complete line of modern commercial texts, bookkeeping texts have always been its leaders. The *20th Century* has been, for a number of years, the most popular and generally used bookkeeping text; notwithstanding this fact, the company published, six years ago, the first *Balance Sheet Approach* text for high schools, in an effort to meet the demands of those wishing to so present this subject. McKinsey's *Bookkeeping and Accounting* is second in popularity only to the *20th Century*, and it is undoubtedly the leader in *Balance Sheet Approach* texts.

During the past few years there has been considerable demand for junior business training material for eighth and ninth grade students. We hesitated to publish anything along this line until we could determine just what was desired, since teachers, although realizing that such material was desirable, did not agree as to just what was wanted. However, this company has recently published three junior business training texts, in an effort to meet the various demands expressed by leading educators: One of the clerical type; one of the informational or educational type; and one of the inspirational type. A unique laboratory set, in the nature of a project, may be had for use with either of these texts, or independent of any text.

516 Mission Street, San Francisco.

# *OUR BOOKMAN MAKES A CALL*

"Good morning, Mr. Martin," said our bookman as he paused at the door of the busy superintendent's office.

"Hello, World Book Company," cordially responded Superintendent Martin. "Come in. I was just going to write your house a letter. In the January issue of the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION, you had a page entitled Guess Where This Happened which gave some good technique for conducting adoptions. The article also greatly interested me in your Schorling-Clark books and we shall want to try these out at once."

"We are glad to get such favorable reaction to our educational advertising," said the bookman.

"Yes," added the caller, "in the short time the Schorling-Clark texts have been out, over 1,000 cities in 46 states and four foreign countries have begun the use of one or more of the books."

"How do you account for such unusual popularity?" inquired Mr. Martin.

"There are several reasons," replied our representative, "chief among them is the fact that Schorling and Clark broke away from 'factory methods' in textbook making and made their books face to face with the child, not alone in the authors' own schools but in a cross section of junior high schools of the country from Maine to California. Every page was subjected to experimentation in regular classes aggregating 3,000 children taught by 150 co-operating teachers. Every decision upon content or method was based upon measured results plus teacher judgment."

"Such a system of school book making appeals to me tremendously," said Superintendent Martin. "I can have full confidence in such books from the start. Surely we would be safe with Schorling and Clark."

At this point the superintendent began a careful examination of the books, *Modern Mathematics, Seventh School Year; Modern Mathematics, Eighth School Year;* and *Modern Algebra, Ninth School Year.*

"You have the most interesting and most practical mathematics texts I have ever seen," he said with much emphasis. "Your problem material is true to life; your real training in thinking and in problem solution is most unusual and your practice tests take care of the fundamentals.

"Are you bringing out any other books in mathematics?" inquired Mr. Martin.

"Yes," replied the representative, "we have just published *Modern Plane Geometry* by Clark and Otis and soon will have ready an advanced course in algebra by Dr. Schorling. Furthermore, our mathematics program includes an articulating course on a straight highway through the elementary grades, junior and senior high schools."

"Just what schools long have needed," responded the school man.

WORLD BOOK COMPANY
149 New Montgomery Street, San Francisco
*"Books That Apply the World's Knowledge to the World's Needs"*

# *THE GINN PAGE*

In 1867 Edwin Ginn founded a new educational publishing house to supply the new types of books demanded by the rapidly growing schools in those changing times. In 1927—sixty years later—we find the schools growing with a rapidity that would have been incredible in 1867 and with tremendous changes demanded in curriculum, administration, organization, and texts to meet the changing needs of the time. This is particularly true in California.

In the sixty years of our collective experience we have seen a real revolution in all phases of school work that affect our business. Textbooks were many times written by authorities remote from classroom activity and the course of study was usually based on the text that was imposed by the fiat of the administration officer. Today the curriculum and the course of study are generally worked out by the teachers on the job in the classroom helped, of course, and directed by administrative officers, research and psychological bureaus, and educational specialists in collaboration with the authorities in the subject.

We are interested in all this new activity and in perfect sympathy with it. In any school system where we can co-operate we are anxious to do so. Some of our most important new texts, like the *Gray and Jenkins Latin for Today,* just published, are the results of elaborate investigations covering periods of years. The new book by Muzzey—*The History of the American People*—for a full year's course is the result or climax of many reports on the teaching of American history, backed by the recommendations and suggestions of thousands of teachers teaching Muzzey's earlier text in the high schools of the country.

The growth of commercial education in the high schools is a wonderful story all by itself. Only a few years ago this part of the country's educational program was left largely to the business colleges. You can easily understand the great demand in recent years for new textbooks prepared *by* high school teachers *for* high schools—books not of the short-cut business college type or of the rule-of-thumb or parrot-like pedagogy, but rather books the pedagogy of which should make a course in bookkeeping, for instance, as valuable from any standpoint as a course in Latin, Greek or mathematics might be. *Bookkeeping and Business Knowledge,* by Jackson, Sanders and Sproul, recently published by us, is an excellent illustration of just this improvement in the pedagogy of commercial texts prepared especially for high school use by people with high school experience who for years have been students of the high school commercial curriculum.

We have in press other texts to be published soon that are the direct results of scientific research, classroom trial, and curriculum studies.

At times the new course of study is ahead of any published books to fit it, and occasionally we publish books that are a step ahead of the current practice, but our main job is to keep in step with the curriculum makers.

S. C. S.

GINN AND COMPANY, 45 Second Street, San Francisco.

# *THERE IS A PLACE FOR THEM*

Dr. William T. Bawden says: "Let us not fail to recognize that there is tremendous demand for young persons who are *thoroughly trained* in something. Parents, teachers, and students should be told something of the opportunities in art as a vocation."

When a person considers the changes in industrial and social conditions in the United States since the World War, he realizes that this is not an exaggerated statement. Formerly the American manufacturer of textiles, ceramics, and of wares in metal and wood relied, for designs and designers, upon the supply from Europe. The publishers did likewise for illustrators. With the supply of European artists cut off by the World War, they looked to the American art schools for designers, illustrators, and poster artists. As almost all of these art schools limited themselves to teaching the Fine Arts, the call was not adequately met and a great dearth of practical artists and designers resulted. Upon investigation it was disclosed that there were only eight schools in the country offering industrial art courses, the California School of Arts and Crafts being the only one on the Pacific Coast.

And this demand on the part of the manufacturers has not been fully met, for American industries have continued to develop rapidly and hence to require an increasingly large number of trained designers. Not only are American manufacturers producing more goods, but these same manufacturers now realize the importance of design. Where, for example, lasting qualities of materials were formerly the chief end, today's fast-changing fashions place the emphasis upon originality of design and make it the more important selling quality in a fabric.

Therefore, the person possessing originality and artistic talent should develop it. To do this he must go to an art school to get the fundamentals of art and then to specialize in the particular field in which his talent lies—either as designer, illustrator, poster artist, as teacher or supervisor of the arts and crafts in schools or colleges, or as portrait, landscape, or mural artist.

The California School of Arts and Crafts has three divisions: first, the School of Applied Arts (the industrial and commercial art division); second, the School of Art Education (the teacher-training division); and third, the School of Fine Arts. By taking the full four-years' course, the qualified student may earn the Bachelor's degree in any one of the three divisions elected. Further information regarding the opportunities for talented individuals who take up art as a life work or regarding courses offered by the School, may be secured by addressing:

Frederick H. Meyer, *Director,*
CALIFORNIA SCHOOL OF ARTS AND CRAFTS, INC.
Broadway at College Avenue, Oakland, California

Summer Session: June 20 to July 29, 1927. Illustrated catalog upon request.

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